Woods Hole Oceanographic Institution ATLAS - GAZETTEER COLLECTION

# NOAA Technical Memorandum NMFS



1988

# ICHTHYOPLANKTON AND STATION DATA FOR CALIFORNIA COOPERATIVE OCEANIC FISHERIES INVESTIGATIONS SURVEY CRUISES IN 1975

David A. Ambrose Richard L. Charter H. Geoffrey Moser Bradley S. Earhart

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## **NOAA Technical Memorandum NMFS**



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NOAA-TM-NMFS-SWFC-110

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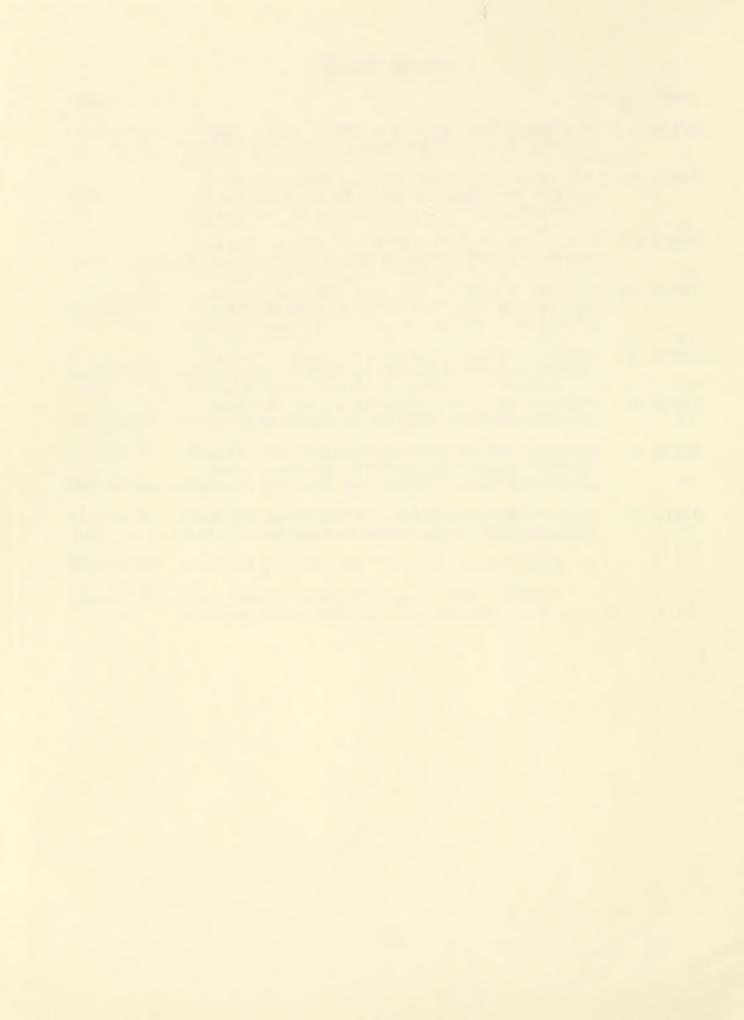
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#### ABSTRACT

This report provides ichthyoplankton and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) cruises conducted off California and Baja California in 1975. It is the twenty-first report in a series that presents these data for all biological-oceanographic CalCOFI surveys from 1951 to the present. A total of 1592 stations was occupied during eight monthly multivessel cruises over the survey area which extended from Pt. Reyes, California to San Juanico, Mexico, and seaward to several hundred miles. data are listed in a series of 6 tables; the background, methodology, and information necessary for interpretation quantitative analysis of the data are presented accompanying text. All pertinent station and tow data, including volumes of water strained and standard haul factors, are listed in the first table. Another key table lists, by station and month, standardized counts of each of the 153 larval fish categories identified from survey samples. This and previous and subsequent reports make the CalCOFI ichthyoplankton and station data available to all investigators and serve as guides to the newly developed computer data base.

#### INTRODUCTION

This report, the twenty-first of a series, provides ichthyoplankton and associated station and tow data from California Cooperative Oceanic Fisheries Investigations (CalCOFI) joint biological-oceanographic survey cruises conducted in 1975. This program was initiated in 1949, under the sponsorship of the Marine Research Committee of the State of California, to study the population fluctuations of the Pacific sardine (Sardinops sagax) and the environmental factors that may play a role in such fluctuations. CalCOFI, known as the California Cooperative Sardine Research Program from 1949 to 1953, was made up of representatives of the South Pacific Fisheries Investigations (SPFI) of the U.S. Fish and Wildlife Service [now the La Jolla Laboratory, National Marine Fisheries Service (NMFS)], Scripps Institution of Oceanography (SIO), the California Department of Fish and Game (CDFG), the California Academy of Sciences (CAS) and the Hopkins Marine Station of Stanford University. The first three of these agencies supplied ships and personnel to conduct the sea surveys. NMFS processed the plankton samples and analyzed the ichthyoplankton from them. processed and analyzed the hydrographic samples and measurements and also analyzed invertebrate groups from the plankton samples.

The boundaries, station placement, and sampling frequency for the CalCOFI survey area were based on the results of joint biological and oceanographic cruises conducted by NMFS and SIO during 1939-41. Those cruises were designed to collect sardine eggs and larvae and associated hydrographic data over the entire

areal and seasonal spawning range of the species. On these survey cruises, plankton tows were made to 70 m, a depth which encompassed the vertical distribution of sardine eggs and larvae. Wide-ranging joint biological and oceanographic survey cruises were resumed in 1949 with sardine as the focus; however, an increasing interest in other biological components resulted in the deepening of standard tows to 140 m in 1951. This marked the beginning of truly quantitative ichthyoplankton sampling on CalCOFI surveys.

Some data resulting from CalCOFI surveys in 1975 have been published. Hydrographic data (Univ. of Calif., SIO, 1984a,b) were presented in standard formats. Distributional maps of larvae of 2 taxa taken on CalCOFI surveys during 1975 are presented in the CalCOFI atlas series: rockfish (Sebastes spp.), Ahlstrom et al., 1978; and northern anchovy (Engraulis mordax), Hewitt, 1980.

A computer data base for eggs and larvae of sardine and anchovy, for larvae of Pacific hake (Merluccius productus), jack mackerel (Trachurus symmetricus) and Pacific mackerel (Scomber japonicus), and for eggs of Pacific saury (Cololabis saira) was established in 1969. The development of a data base for other fish larvae is a complex undertaking because competency of identification has evolved steadily over the past 38 years. began the task of producing a CalCOFI ichthyoplankton data base and associated data report series in 1983. All available original records for 1975 were subjected to an extensive verification and editing process to produce this report. and previous (Ambrose et al., 1987a, b, c; 1988a, b; Sandknop et al., 1987a,b; 1988a,b,c; Stevens et al., 1987a,b,c; 1988a,b; Sumida et al., 1987a,b; 1988a,b,c) and subsequent reports make the CalCOFI ichthyoplankton and station data available to all investigators and serve as guides to the computer data base. The data base will be modified when additional errors are discovered and when composite taxa from the earlier years are reidentified. These reports are the fundamental reference documents against which subsequent changes in the data base can be compared.

### SAMPLING AREA AND PATTERN

In 1975, the seven CalCOFI survey cruises occupied stations during portions of all months except April, August, and September. An eighth cruise (7412), conducted in November and December of 1974, was included in the 1975 data base. A total of 1592 stations was included in this data base, with an average of 199 stations per cruise (range 50-279). Coverage of the survey station pattern varied among cruises and the entire survey area was not covered on any single cruise (Figures 1-10, Table 1). The area off northern California (lines 40-57) was not covered. All major lines were occupied off central California (lines 60-77) on 7412, 7501, 7503, 7507, and 7511; only three lines were occupied in this region on 7505. The area between Pt. Conception, California, and Pt. San Juanico, Baja California

(lines 80-137) was occupied on 7412, 7501, 7507, 7510 and 7511; southerly coverage of this region stopped at Sebastian Vizcaino Bay (line 120) on 7505 and at Pt. Abreojos (line 130) on 7503. The area off southern Baja California (lines 140-157) was not surveyed in 1975. Typically, coverage did not extend beyond station 90 (approximately 160-260 miles offshore). Cruises 7510 and 7511 in our data base are considered as 7510 in the SIO hydrographic data base and are combined in Figure 9.

Two vessels were employed on these cruises: the David Starr Jordan of NMFS, and the Alexander Agassiz of SIO. The David Starr Jordan was used on seven cruises and the Alexander Agassiz on four (Table 1; Univ. of Calif., SIO, 1984a,b).

After 1969, CalCOFI surveys were made on a triennial basis. These began in 1972 and continued every 3 years (1975, 1978, 1981, 1984) until 1985 when annual surveys were resumed.

#### SAMPLING GEAR AND METHODS

During 1975, a 1-m diameter ring net was used on all cruises; the net was similar to that used on previous surveys except the fabric was 0.505 mm nylon mesh instead of silk bolting cloth (Smith, 1974). The cod end was constructed of 0.333 mm nylon mesh. The frame was fastened to a short 3-lead bridle connected to several meters of line which attached to the towing cable by a clamp. A current meter was suspended in the center of the mouth of each net to measure volume of water filtered (see Kramer et al., 1972, for further details).

The standard tow in 1975 was an oblique haul to ca. 210 m depth (to 15 m of the bottom in shallow areas) designed to filter a constant amount of water per depth interval (ca.  $3m^3/m$  of depth) over the vertical range of most ichthyoplankters. Hauls were made at a ship speed of 1.5-2.0 knots and initiated by

CalCOFI lines (Figure 11) are arranged perpendicular to the coastline and extend from the Canadian border (line 10) to below Cape San Lucas, Baja California (line 157). Stations were established on the basis of a perpendicular to line 80 (off Pt. Conception) at a point designated as station 60. Stations were plotted seaward and shoreward from station 60 on each line. Cardinal CalCOFI lines (those ending in "0") are 120 miles apart and usually bracket two ordinal lines (ending in "3" or "7"), so that lines are 40 miles apart over most of the pattern. Cardinal stations are 40 miles apart and typically these are separated by a station number ending in "5" so that stations are 20 miles apart out to station 90 on most lines. Stations are placed at closer intervals near the coast and islands to accommodate these features (see Kramer et al., 1972 for further details).

clamping the net line to the towing cable with the 45 kg terminal weight about 10-15 m below the surface. The net was lowered to ca. 210 m depth by paying out 300 m of wire over a 6 minute period (35 m of depth/min.). After fishing at depth for 30 seconds, the net was retrieved at 20 m/min. (14 m depth/min.). The angle of stray of the towing cable was recorded every 30 seconds and maintained at  $45^{\circ}$  ( $\pm 3^{\circ}$ ) by adjusting the ship speed and course. After reaching the surface, the net was washed down and the samples preserved in 5% formalin buffered with sodium borate. Flowmeter readings were made at the beginning and end of each tow. Detailed descriptions of gear and methods are given by Kramer et al. (1972), and Smith and Richardson (1977).

#### LABORATORY PROCEDURES

Laboratory processing began with the determination of a displacement volume for each sample (methods described in Staff, SPFI, 1953 and Kramer et al., 1972). Sorting involved the removal of ichthyoplankton from the sample and identification and separation of: eggs and larvae of Pacific sardine and northern anchovy; larvae of Pacific hake; and eggs of Pacific saury. Some samples were fractioned into aliquots using a Folsom plankton splitter (McEwen et al., 1954) prior to sorting. Criteria for fractioning were: 1) samples taken at a distance greater than 200 nautical miles from shore were not fractioned, 2) samples taken closer than 200 miles from shore and containing 25 ml of plankton or less were not fractioned, and 3) samples taken closer than 200 miles from shore and containing more than 25 ml of plankton were fractioned to 50% of their original volume (J. R. Thrailkill, pers. comm.). Aliquot percentages for fractioned samples from 1975 are listed in Table 1 under the "Percent Sorted" column; 67.9% of samples collected in 1975 were fractioned.

A "standard haul factor" (SHF) was calculated for each tow to make them comparable and allow estimations of areal abundance. This factor adjusts the number of eggs or larvae in a haul to the number in 10 m of water strained per meter of depth fished. If the vertical distribution of the species has been encompassed then the adjusted value is equivalent to the number under 10 m of sea surface. The SHF is calculated for each haul by the formula:

$$SHF = 10 D V$$

V = total volume of water (m<sup>3</sup>) strained during the haul

 $V = R \cdot a \cdot p$ 

- where R = total number of revolutions of the current meter during the haul
  - a = area (m<sup>2</sup>) of the mouth of the net
  - p = length of column of water (m) needed to
     produce one revolution of the current
     meter.

Tow depth, volume of water strained, and standard haul factor are listed in Table 1 for each tow taken during 1975. Detailed descriptions of factors involved in calculating these values are presented in Ahlstrom (1948), Kramer et al. (1972), and Smith and Richardson (1977).

#### IDENTIFICATION

Identification of ichthyoplankton species beyond those separated during the sorting process was carried out by a separate group of specialists. Ontogenetic stages of fishes are inherently difficult to identify and this is further complicated by the large number and diversity of species which contribute to the ichthyoplankton of the California Current region. identifications were accomplished by establishing ontogenetic series on the basis of morphology, meristics, and pigmentation and then identifying these series by relating them to known metamorphic, juvenile, or adult stages with overlapping features (Powles and Markle, 1984). A total of 151 taxa was identified for 1975, with 97 taken to species, 25 to genus, 24 to family, and 5 to order or suborder. In the decade of the 1970's some taxa were identified for the first time. These included larvae of the bathylagid Bathylagus longirostris, the gonostomatids Danaphos oculatus and Valencienellus stellatus, the myctophid Bolinichthys spp., and the trichiurid Lepidopus xantusi. in the families Scopelarchidae and Nomeidae were identified to genus or species. Five species of rockfish in the Sebastes group were also identified: S. aurora, S. jordani, S. levis, S. macdonaldi, and S. paucispinis.

task of producing a reliable and equitable ichthyoplankton data base required extensive procedures to verify, correct, and edit the original identifications. primary data source was the original identification sheets (see Kramer et al., 1972, for examples); however, a critical resource all phases of this process was the ichthyoplankton collection in which the samples are archived. Throughout the course of CalCOFI ichthyoplankton studies, samples have been identified to the lowest taxon possible. In reviewing these identifications for the data base, our approach has been conservative and we have preserved those identifications and counts which we could confirm, while correcting as many of the errors as possible. After computer entry, taxonomic errors and

inconsistencies in the data base were corrected and the most obvious identification errors were corrected. Our current knowledge of ichthyoplankton techniques coupled with a precise understanding of the development of identification competency in the program over the years allowed us to critically judge the historical records. Identifications were changed to different taxa, lumped to a higher taxonomic category, or given a more precise taxonomic name. In some cases, identifications of a taxon were inconsistent among cruises in a year. These records were made equitable by lumping to the higher taxonomic category to avoid biases that could result in quantitative misinterpretation.

Next, statistical, seasonal, and geographic outliers were identified, employing a series of graphic summaries and listings. Examination of geographic outliers proved to be especially effective because of our accumulated knowledge of species distributions. In the course of examining samples for these outliers, other identification errors were discovered and eventually all taxa were scrutinized to some extent. Lastly, certain taxa were reexamined in all samples for the entire CalCOFI time series. These taxa were selected because of their commercial, ecological, phylogenetic, or zoogeographic importance or because taxonomic confusion was at the ordinal level. The following is a list of the taxa for 1975 which received special attention, with explanations and caveats intended to aid in quantitative interpretations:

- Anguilliformes tentative and sporadic identifications to family or lower taxon lumped to order.
- Sardinops sagax all specimens south of line 120 checked for misidentification of Opisthonema spp.
- Engraulis mordax some nearshore samples of small E. mordax may contain other anchovy genera which could not be differentiated.
- Nansenia spp. all specimens checked and identified as N. candida or N. crassa; all specimens of these species near their range boundaries checked.
- Bathylagus spp. includes small and/or disintegrated specimens of Bathylagus or Leuroglossus stilbius.
- Stomiiformes all specimens checked and identified to genus or species; residuals are small, poorly preserved or unavailable specimens.
- Cyclothone spp. tentative and sporadic identifications to species were lumped to genus.
- Vinciguerria lucetia some V. poweriae may remain in these samples because small larvae of the two species could not be

- differentiated; sporadic identification of *V. poweriae* began in 1961.
- Sternoptychidae tentative and sporadic identifications of hatchetfishes to genus were lumped to family.
- Paralepididae all specimens examined and identified to species; residuals are small, poorly preserved or unavailable specimens.
- Scopelarchidae all specimens reidentified to species except Scopelarchus; residuals are a small, poorly preserved specimen and one unavailable specimen.
- Scopelarchus spp. tentative and sporadic identifications to species lumped to genus.
- Lampanyctus spp. tentative and sporadic identifications to species lumped to genus.
- Lampanyctus regalis underrepresented because of inability to differentiate small larvae (<5 mm) from those of other species of the genus; counts may include other species of the genus because of difficulty in identifying larvae of this large and complex genus.
- Lampanyctus ritteri comment for L. regalis applies to this species.
- Diogenichthys atlanticus all specimens at margins of range checked.
- Diogenichthys laternatus all specimens at margins of range checked.
- Hygophum spp. all specimens reidentified to species.
- Hygophum atratum all specimens checked.
- Hygophum reinhardtii all specimens checked.
- Symbolophorus californiensis all specimens south of line 120 checked.
- Ophidiiformes this category did not exist originally and unidentified larvae of this order, including a type referred to as "Zoarcidae", were originally placed in the "blenny" category.
- Chilara taylori all specimens checked.
- Ophidion scrippsae all specimens checked.
- Trachipteridae tentative and sporadic identifications to genus were lumped to family.

Melamphaes spp. - all identifications ascribed to Melamphaidae were reexamined and assigned to genus (Melamphaes, Poromitra) or species (Scopelogadus bispinosus); larvae originally identified as Melamphaes spp. were not reexamined and this category may contain other melamphaid genera.

Anoplopoma fimbria - specimen checked.

Cottidae - all specimens checked.

Oxylebius pictus - all specimens checked.

Zaniolepis spp. - all specimens checked.

- Blennioidei this is the residual of the completely reexamined "blenny" category, which also contained various misidentified ophidiiforms, and is now restricted to members of northern stichaeioid families and true blennioids (other than Hypsoblennius spp.) in the southern part of the pattern).
- Labridae all specimens originally identified to family were reexamined and assigned to genus (Halichoeres spp.) or species (Oxyjulis californica, Semicossyphus pulcher).
- Chromis punctipinnis records south of about line 120 may include other pomacentrid taxa.
- Howella brodiei specimen checked; in this report we list H.

  brodiei in the family Apogonidae for convenience,
  recognizing that its systematic affinities are not resolved.
- Carangidae all specimens checked; tentative and sporadic identifications to genus or species (except *Trachurus symmetricus* and *Seriola lalandi*) were lumped to family.

Seriola lalandi - all specimens checked.

- Gerreidae tentative and sporadic identifications to genus lumped to family.
- Haemulidae tentative and sporadic identifications to genus lumped to family.

Girella nigricans - specimen checked.

Medialuna californiensis - all specimens checked.

Caulolatilus princeps - all specimens checked.

Sciaenidae - tentative and sporadic identifications to genus lumped to family.

- Scombridae all larvae identified to this family or constituent taxa (except *Scomber japonicus*) were reexamined and reassigned; residuals are small, poorly preserved specimens.
- Pleuronectiformes all specimens of this category were reexamined and reidentified.
- Bothidae all specimens examined and reassigned; most were assigned to various paralichthyid genera.
- Citharichthys spp. all larvae identified to species were lumped to genus except C. stigmaeus; category includes larvae of Etropus spp.
- Citharichthys stigmaeus includes larvae larger than ca. 4.5 mm; smaller larvae are in Citharichthys spp.
- Paralichthys californicus all specimens examined.
- Xystreurys liolepis originally misidentified as Paralichthys californicus; all specimens reidentified.
- Glyptocephalus zachirus all specimens examined.
- Hypsopsetta guttulata some specimens were originally identified as Pleuronichthys spp.
- Lepidopsetta bilineata specimens originally identified as Psettichthys melanostictus.
- Microstomus pacificus all specimens examined.
- Pleuronichthys spp. all larvae of this genus and constituent species were examined and assigned to species; residuals are unavailable specimens.
- Psettichthys melanostictus all specimens examined.

#### COMPUTER ENTRY AND EDITING

Each taxon on the original identification sheets was given a 3-digit code based on the list of codes in Haight et al. (1979). Taxon codes and counts from these sheets were keypunched by cruise and station, along with pertinent station and tow data and entered into the VAX 11/780 computer at the University of California, San Diego, Computing Center. After entries were completed for an entire year, print-out listings of taxa and counts on each station were compared with the original data sheets to eliminate keypunch errors. Next, data in the file were cross-checked with data on an existing file which contained: station and tow data; numbers of eggs of sardine, anchovy, and saury; numbers of larvae of sardine, anchovy, hake, jack mackerel, and Pacific mackerel; total number of fish eggs; and total number of fish larvae.

Discrepancies in ichthyoplankton data in these two files were corrected by inspecting original records from the sorting laboratory, the original ichthyoplankton identification sheets, and the samples themselves. Station and tow data discrepancies between the two files were corrected by reviewing ships' logs and deck tow sheets, original records from the sorting laboratory, cruise announcements, publications, header information on the ichthyoplankton identification sheets, and station plots generated for each cruise. Eventually all station and tow data were checked by comparing these sources.

The corrected ichthyoplankton data base was then examined statistically and outliers were found and checked as above. Distributional plots were then prepared for each taxon and these were checked by reviewing the data sources mentioned above and by examining archived specimens. A listing of each taxon by station (Table 4) was produced, which became the primary document for subsequent checks. Misidentifications found in geographic outlier checks and other misidentifications and data problems discovered in the course of examining archived samples resulted in several iterations of Table 4. Finally, totals in Table 4 were checked against annual summaries of incidence and abundance (Tables 2 and 3). Ecological analyses of the data were conducted concurrently with editing procedures and provided cross-checks that allowed correction of errors.

#### SPECIES SUMMARY

Collections made in 1975 were analyzed separately from those taken in November and December of 1974 with respect to the pooled occurrences and counts of larvae (Tables 2A, B; 3A, B). Larvae of northern anchovy (Engraulis mordax) represented 72% of all fish larvae taken on CalCOFI cruises during 1975 and numbered almost 10 times as many as Pacific hake, Merluccius productus, the next most abundant taxon with 7.3% of the total larvae (Table 2b, 3b). Northern anchovy also ranked first in incidence; M. productus ranked 8th. The next most abundant was the rockfish genus Sebastes with 3.9% of the total, followed by the sanddab genus Citharichthys with 3.0%; they ranked 2nd and 4th respectively in incidence. The deepsea smelt Leuroglossus stilbius ranked 5th in abundance (2.5%) and 3rd in occurrence. Two myctophids, Triphoturus mexicanus and Stenobrachius leucopsarus, ranked 6th (1.6%) and 7th (1.2%) in number, and 6th and 5th in occurrence. The final 3 taxa in the top 10 collected in 1975 were the croaker family Sciaenidae, with 0.9%, the gonostomatid Vinciguerria lucetia, with 0.7%, and the deepsea smelt Bathylagus ochotensis, with 0.6% of total larvae. These 3 taxa ranked 10th, 16th, and 9th in incidence. The appearance of croaker larvae in the top 10 may reflect the increased number of stations occupied on the shoreward end of each line where these larvae are most abundant. These 10 top taxa contributed 93.5% to the total number of larvae collected in 1975; the remaining 6.5% was distributed among 140 taxa plus the disintegrated and unidentified categories. The top 10 taxa comprised 4 coastal demersal taxa, 1 coastal pelagic species, and 5 midwater species.

Six of the 10 most numerous taxa collected in 1974 (Table 2A) were also among the top 10 in 1975 - Engraulis mordax with 63.4% of the total larvae, Sebastes spp. (9.7%), Citharichthys spp. (3.7%), Vinciguerria lucetia (2.6%), Sciaenidae (2.2%), and Leuroglossus stilbius (2.0%). These six taxa ranked 1st, 3rd, 2nd, 8th, 6th, and 7th in incidence respectively in 1974. Other taxa ranking in the top 10 for 1974 were: 3 myctophids, Diogenichthys laternatus (1.4%), Protomyctophum crockeri (1.4%), and Stenobrachius leucopsarus (1.0%); and a rockfish, Sebastes paucispinis (1.0%). These 10 taxa contributed 87.5% to the total number of larvae collected in the 272 tows during 1974; the remaining 12.5% was distributed among 78 taxa plus the disintegrated and unidentified categories. Of the top 10 taxa, 4 were coastal demersal taxa, 1 was a coastal pelagic species, and 5 were midwater species.

#### EXPLANATION OF TABLES

- Table 1 This table lists by cruise the pertinent station and tow data for 1975 (including November and December, 1974), the volume of water filtered and standard haul factor for each tow, the percent of sample sorted, and the total numbers of fish eggs and larvae. cruises are designated by four digits; the first two indicate the year and the second two the month. Within each cruise the data are listed in order increasing line and station number (southerly seaward directions); the order of station occupancy shown on the station charts (Figures 2-10). Stations are designated by two groups of digits; the first set indicates the line and decimal fraction and the second set indicates the station on the line. Time is listed as Pacific Standard Time at the start of each tow 24-hour designation. Methods for determining depth, volume of water strained, standard haul factor, and percent sorted were described in the methods section. The values for total fish eggs and larvae represent raw counts (unadjusted for percent sorted or standard haul factor). Ship codes are as follows: JD, David Starr Jordan; AX, Alexander Agassiz.
- Table 2A- This table lists pooled occurrences of all larval fish taxa taken during November and December of 1974 in ranked order.
- Table 2B- This table lists pooled occurrences of all larval fish taxa taken during 1975 in ranked order.
- Table 3A- This table lists pooled counts of all larval fish taxa taken during November and December of 1974 in ranked

- order. Numbers are adjusted for percent sorted and standard haul factors.
- Table 3B- This table lists pooled counts of all larval fish taxa during 1975 in ranked order. Numbers are adjusted for percent sorted and standard haul factors.
- Table 4 This table gives numbers of fish larvae for each taxon in 1974 and 1975, listed by station and calendar month in which the tow was taken. Counts are adjusted for percent of sample sorted and standard haul factor. Average values are given for stations occupied more than once during a month. See Table 1 for station and tow data and Table 6 for listing of stations with multiple occupancies during a month. Multiple occupancies occurred when a station was occupied more than once during a calendar month; in some cases, multiple occupancies resulted from separate cruises. The orders are listed in "phylogenetic" sequence modified from Nelson (1984). Subtaxa within each order are listed alphabetically. Page numbers for each taxon are given in the index at the end of the report.
- Table 5 This table is a summary of pooled occurrences of all larval fish taxa taken on CalCOFI surveys from 1972 to 1981. Taxa are listed in the same order as in Table 4.
- Table 6 List of stations with multiple occupancies in one month during the 1975 survey.

#### ACKNOWLEDGMENTS

Elbert Ahlstrom, John Butler, Susan D'Vincent, Connie Fay, Barbara MacCall, Geoff Moser, Elaine Sandknop, and Betsy Stevens originally identified larvae from CalCOFI cruises of 1975. Ronald Whyte coded each larval fish taxon or type and Rita Ford entered them into the computer. Debby Snow efficiently assisted in all aspects of data editing and retrieval. Cindy Meyer and James Ryan provided programming assistance. Dorothy designed the CalCOFI data acquisition system and provided data processing support. Ken Raymond, Roy Allen, and Henry Orr helped with graphics and production of the report. Lorraine Prescott prepared the manuscript for printing. Paul Smith determined statistical outliers, provided assistance during geographical outlier checks and offered helpful suggestions throughout the project. Izadore Barrett, Director of the Southwest Fisheries Center provided support critical to the completion of the project. James Thrailkill planned CalCOFI surveys and supervised cruises, data handling, and plankton sorting from 1949 to 1986 and is largely responsible for the high quality of these operations. Without the vision and direction of Elbert Ahlstrom and Elton Sette and the dedicated efforts of the many people who collected, processed, and analyzed the samples, this data base

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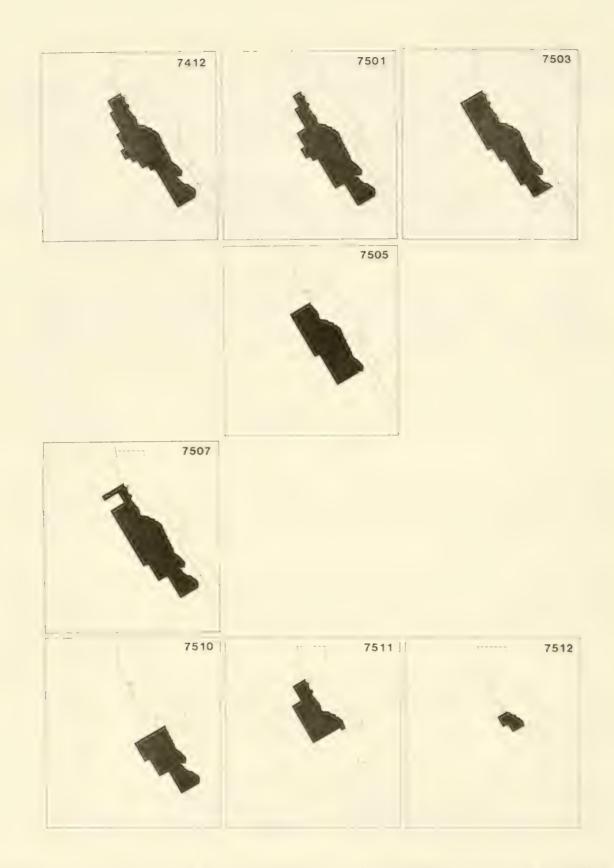


Figure 1. Composite arrangement of diagrammatic charts showing areas sampled on each CalCOFI cruise during 1975.

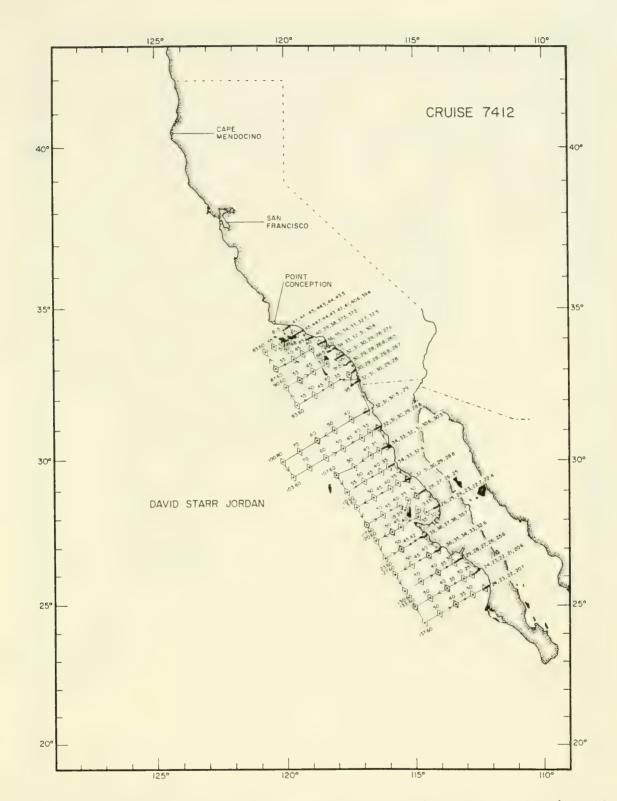


Figure 2. Station pattern for CalCOFI Cruise 7412 showing the track for the David Starr Jordan. Stations with plankton tows are indicated by a dot; circles designate hydrographic stations; diamonds signify STD recordings. Figures 2-10 modified from charts in Univ. of Calif., SIO (1984a, 1984b) to include only those stations listed in Table 1 of this report.

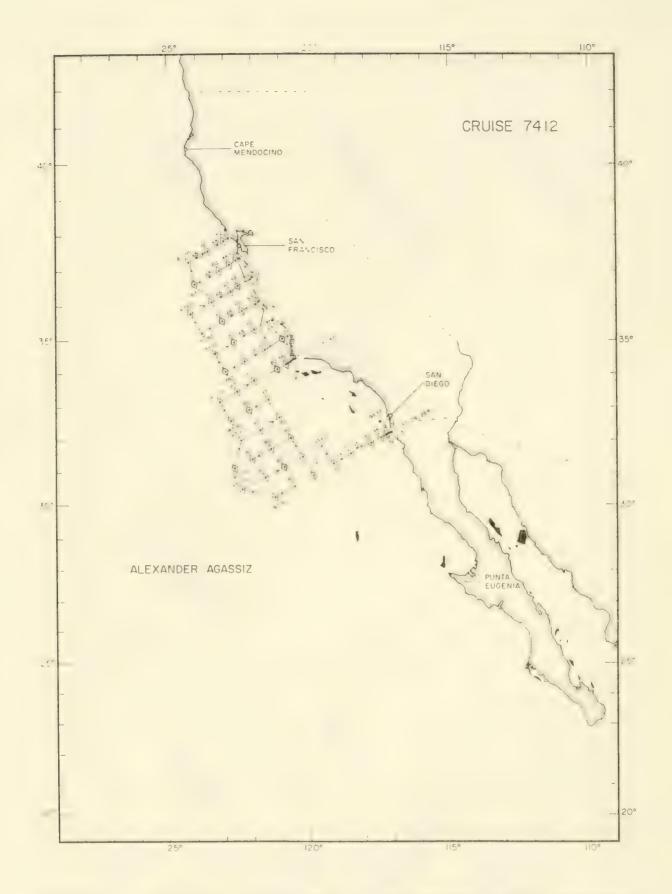


Figure 3. Station pattern for CalCOFI Cruise 7412 - Alexander Agassiz. Symbols as in Figure 2.

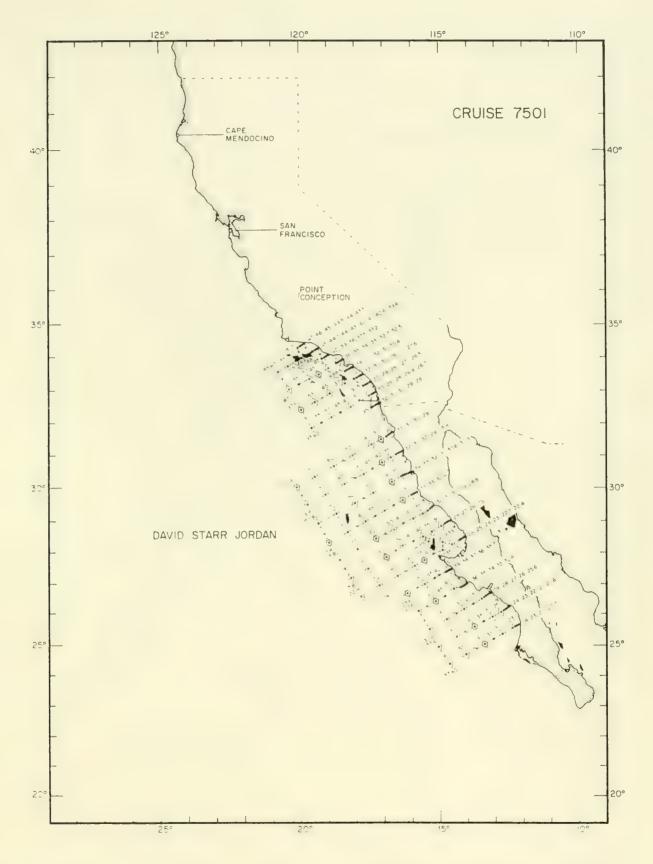


Figure 4. Station pattern for CalCOFI Cruise 7501 - David Starr Jordan. Symbols as in Figure 2.

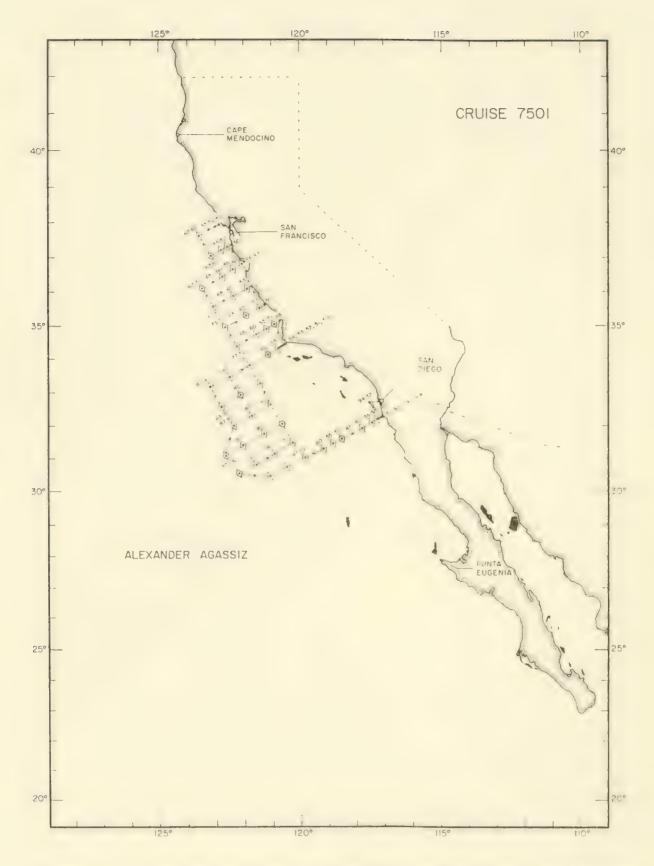


Figure 5. Station pattern for CalCOFI Cruise 7501 - Alexander Agassiz. Symbols as in Figure 2.

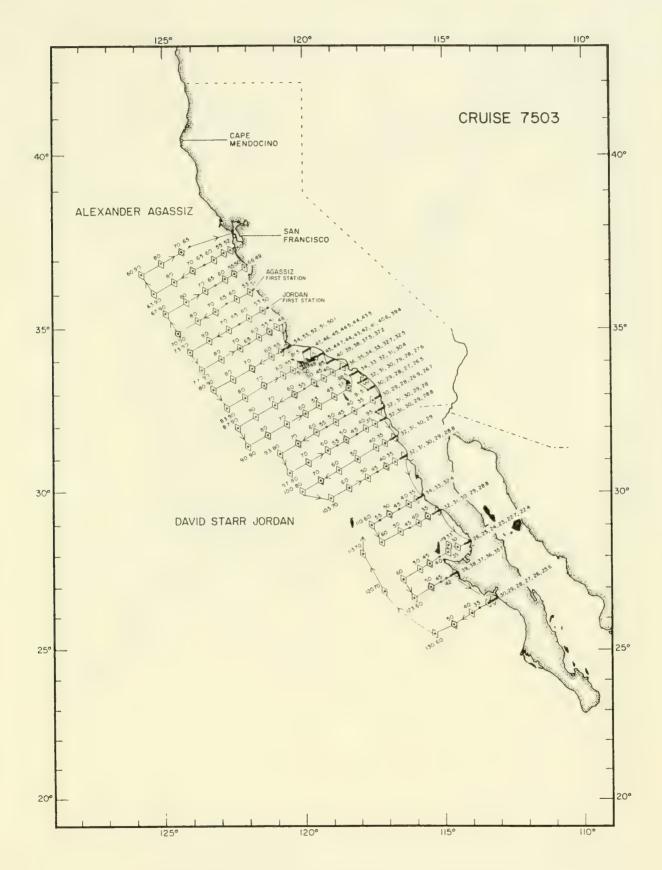


Figure 6. Station pattern for CalCOFI Cruise 7503. Symbols as in Figure 2.

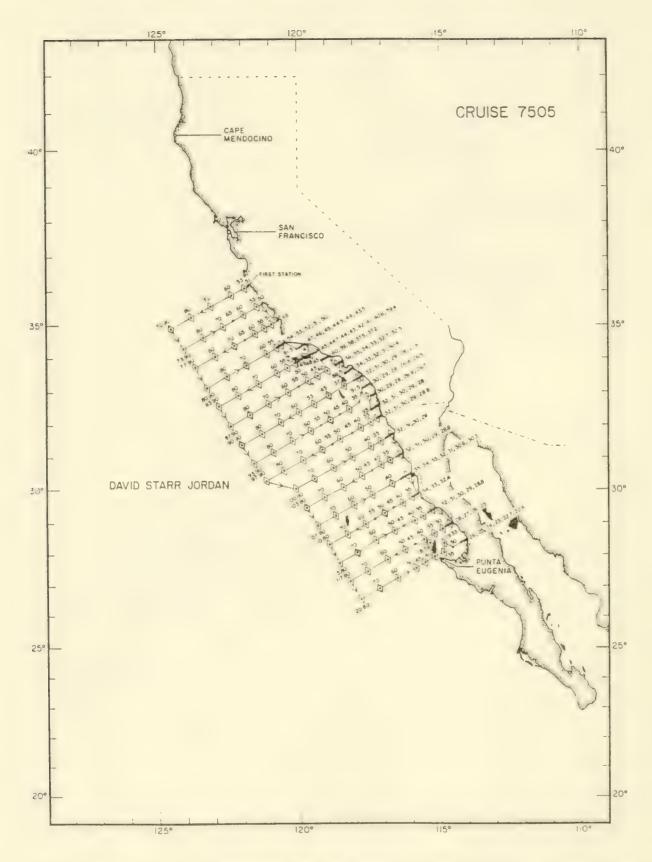


Figure 7. Station pattern for CalCOFI Cruise 7505. Symbols as in Figure 2.

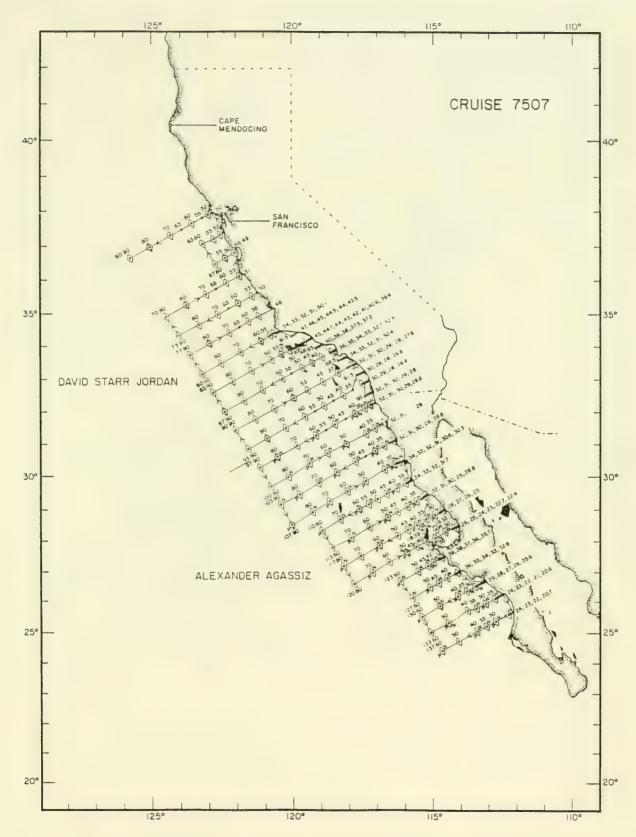


Figure 8. Station pattern for CalCOFI Cruise 7507. Symbols as in Figure 2. "P" and "N" denote phytoplankton and neuston tows, respectively; these data were not included in this report.

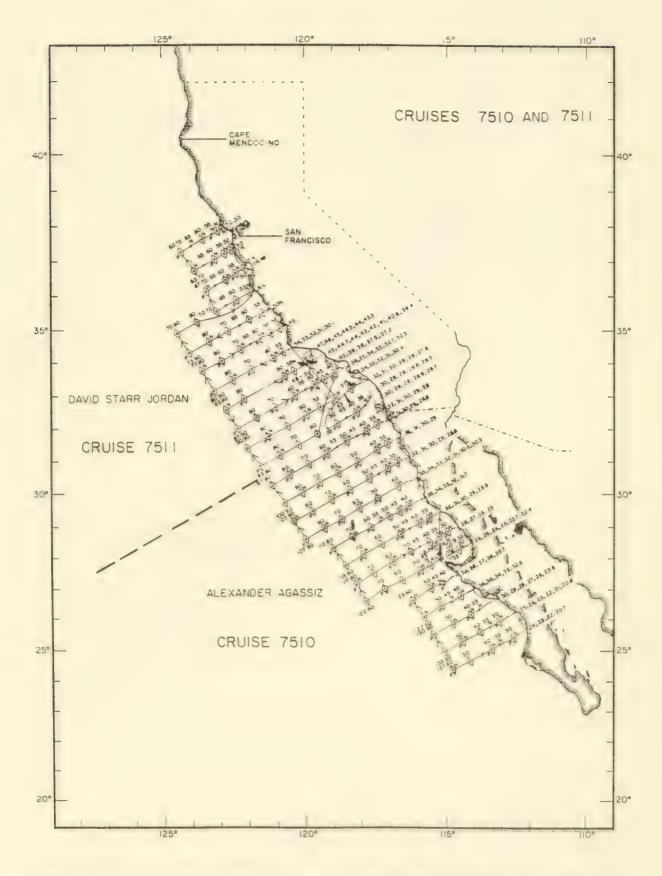


Figure 9. Station pattern for CalCOFI Cruises 7510 and 7511. Symbols as in Figure 8.

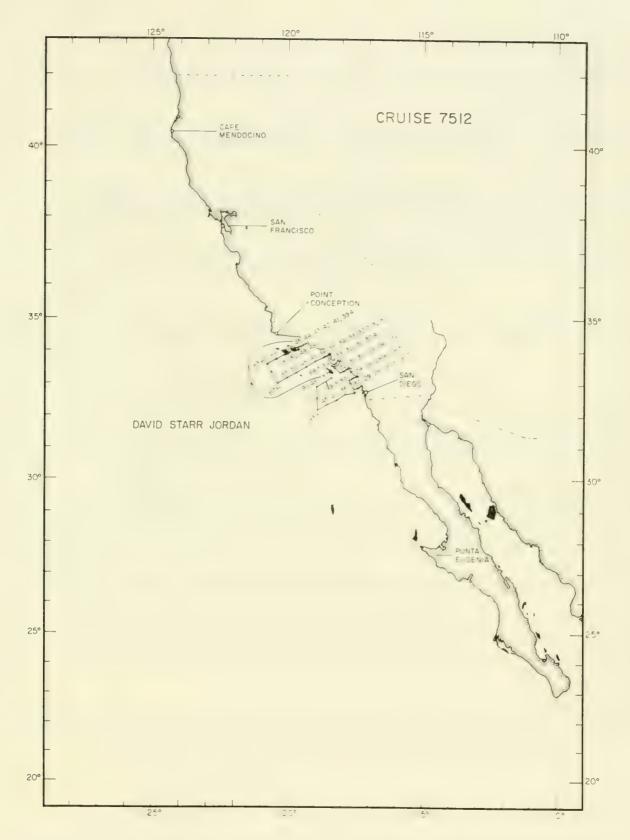


Figure 10. Station pattern for CalCOFI Cruise 7512. Net tow stations indicated by dots; see Univ. of Calif., SIO, 1984b for hydrographic stations.

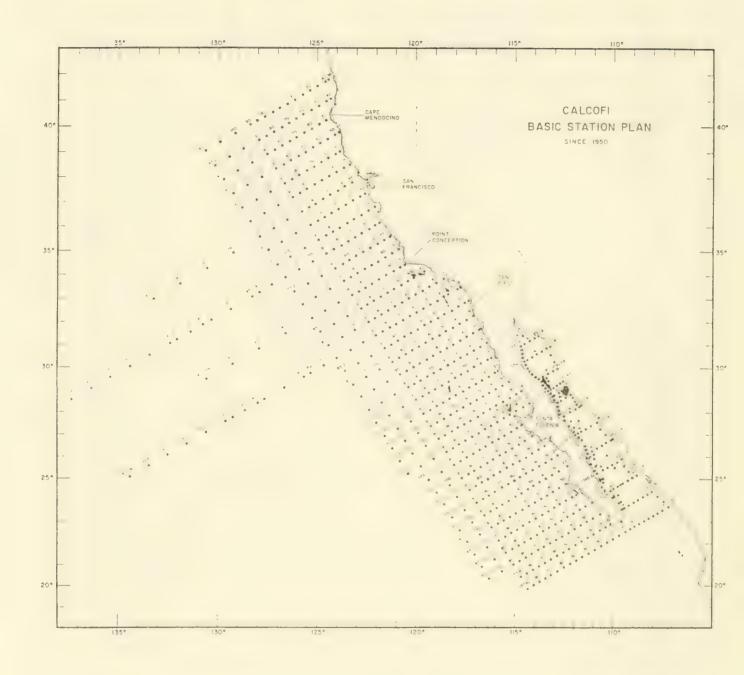


Figure 11. The basic station plan for CalCOFI cruises from 1950 to the present.

TABLE 1. Station and plankton tow data for CalCOFI cruises in 1975. Counts for fish eggs and larvae are not adjusted for standard haul factor or percent of sample sorted.

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	Vol. Water Strained (cu. m)	616 616 724 724 721 721 721 721 721 721 721 721 722 723 723 723 723 723 723 723 723 723
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ise	Time (PST)	10000000000000000000000000000000000000
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		Ship Code	JD GE	ar Gr	J.D	JD	JD G:	3 E	35	JD	JD	an a	an an	JD	JD	d G	d E	35	JD JD	JD	25	95	3 F	an an	JD	ar er	ar.	JD JD	JD	JD	מנ	an On	JD	JD	JD GE	an ar	3 F	JD	JD	
		Long.(W) deg. min.	117 19.0	18 18.	18 57.	15 12.	15 13.	15 18.	15 25.	15 38.	15 57.	16 18.	17 16.	17 55.	18 33.	14 37.	14 41.	14 45.	14 56.	15 16.	15 35.	15 56.	16 20.	17 32.	18 10.	15 23.	14 53.	14 05.	14 06.	14 11.	14 10.	14 34.	14 54.	15 14.	15 33,	15 52.	16 30.	17 49.	14 35.	
		Lat.(N) deg. min.	29 06.0	36.	8 16.	9 25.	9 24.	9 22.	9 20.	9 11.	9 02.	8 52.	8 22.	8 02.	7 41.	8 58.	8 56.	8 54. 8 57	8 48.	8 38.	8 28.	8 18.	7 AB	7 27.	7 08.	8 18.	8 18. 28.	8 27.	8 26.	8 25.	27.0	8 13.	8 03.	7 56.	7 43.	7 33.	/ 13. 6 53	6 33.	7 26.	
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	Total Eggs	26 443 76493 76493 76493 7669 7669 7800 7800 7800 7800 7800 7800 7800 780	3347 10770 2395 4497 4497 336 336 33
	Total Larvae	11424 101888 1018888 1018888 101888 101888 10188	22 132 708 3254 1260 581 30 11
	Percent Sorted	25.0 25.0 25.0 25.0 25.0 25.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0	000000000
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	Vol. Water Strained (cu. m)	22222222222222222222222222222222222222	777777777777777777777777777777777777777
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iise 7	Time (PST)	00532 00532 00532 00532 00536 10536 10537 10537 10533	010000000000000000000000000000000000000
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	Total Larvae	18       1       74111118827242121242224817       1       18281       91         7       2       6       1       188877188877188877188877437	
	Percent Sorted	255.0 255.0 100.0	
	Stand- ard Haul Factor	22222222222222222222222222222222222222	
	Vol. Water Strained (cu. m)	7778 7778 7176 7176 7170 7183 7183 7190 7250 7250 7250 7250 7250 7250 7250 725	
5007	Tow Depth	2012 2013 2014 2016 2017 2017 2018 2018 2017 2017 2017 2017 2017 2017 2017 2017	
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Calcori Cr	Tow Date yr. mo. day	75 03 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 02 75 13 03 13 13 13 13 13 13 13 13 13 13 13 13 13	
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	Long.(W) deg. min.	124 201.4 125 47.1 125 47.1 122 27.8 122 36.0 123 31.0 123 31.0 123 31.0 123 31.0 122 27.0 122 27.0 122 27.0 122 47.0 123 48.5 123 29.5 123 29.6 123 29.6 123 29.6 121 29.5 121 29.0 122 27.0 122 27.0 123 29.6 121 29.5 121 29.5 121 28.5 121 28.5 121 28.5 122 27.0 122 27.0 122 29.6 123 29.6 121 28.5 121 28.5 121 28.5 121 28.5 121 28.5 121 28.5 121 28.5 122 29.6 123 29.6 123 29.6 124 00.0 125 29.6 127 29.5 128 55.0 129 56.5	
	Lat.(N) deg. min.	337 27.0 336 337 27.0 337 27.0 337 27.0 337 27.0 338 37.0 339 37.0 330 37.0 330 37.0 330 37.0 330 37.0 330 37.0 331 37.0 331 37.0 332 37.0 333 37.0 334 52.0 335 37.0 337 37.0 338 37.0 348 37.0 358 37.0 37	
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		Ship	JD	JD GI	a Cr	JD	JD	JD	ar.	QI.	JD	JD	JD GE	dr.	an ar	JD	JD	JD	d d	G.	JD	JD	dh ai	G I	JD	JD Si		JD	JD	JD	df ar	37.	JD	JD	JD	JD	JD	db dr	dr dr	1
		Long. (W) deg. min.	20 35.	120 40.0	20 44	21 09.	21 51.	22 32.	23 13.	07 61	19 52.	19 54.	19 58.	20 02.	19 24.	19 26.	19 30.	19 34.	19 38.	19 41.	19 55.	19 59.	20 05.	20 08.	20 45.	21 26.	22 07.	18 58	18 59.	19 02.	19 06.	19 10.	18 28.	18 29.	18 33.	18 37.	18 43.	18 58	19 39.	
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3		(PST)	2124	71	23	45	34	23	93	83	35	13	5.2	53	35	51	94	50	7.4	40	24	010	75	91	10	03	34	94	25	53	30,0	63	33	23	34	
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		Ship	JD	JD JT	3 -	JD JD	JD	dh di		JD	JD	di di	מון.	an an	JD	an an		gr.	JD JD	JD			JD	JD GI	an an	JD	JD	מו.	J.D	JD	J.D.	35		JD	dr d:		JD	dr dr
		Long.(W) deg. min.	17 26.	117 04.0	17 04.	17 13.	17 15.	17 27.	17 48.	18 30.	18 49.	19 10.	20 31	16 43.	16 46.	16 50.	16 45.	17 27	18 00.	18 47.	19 27.	16 20.	16 21.	16 24.	16 32.	16 45.	17 04.	17 44.	18 25.	19 04.	15 50.	17 56.	16 00.	16 19.	16 40.	17 19.	17 39.	15 12.
		Lat.(N) deg. min.	2 29.	32 17.8	2 16	2 13.	2 12.	2 05.	1 56.	36.	1 25.	1 15.	0 25.	1 42.	1 40.	1 38.	1 36.	1 30.	1 00.	0 40.	0 20.	1 07	1 07.	1 06	1 03.	0.56.	0 46.	0 36.	0 9 0	9 46.	9 51.	000	9 46.	9 36.	9 27.	9 16.	9 56.	9 25.
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Total Eggs	10000 10000	5633
Total Larvae	10 10 10 10 10 10 10 10 10 10 10 10 10 1	
Percent Sorted	25.0 25.0 100.0	000
Stand- ard Haul Factor	22222222222222222222222222222222222222	. 4
Vol. Water Strained (cu. m)	\$2525 \$2525	7 4
Tow Depth	22000000000000000000000000000000000000	$\neg$
Time (PST)		31
Tow Date yr. mo. day		5 03 2 5 03 2
Ship Code		an an
Long.(W) deg. min.	11132222222222222222222222222222222222	14 45. 15 24.
Lat.(N) deg. min.	222 222 222 222 222 222 233 233 233 233	5 49. 5 29.
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CalCOFI Cruise 7505

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ise	Time (PST)		07070	2	0.5	90	7 6	40	00	) C	) E	33	⊢ 4 ت ت	4 D	9.5	34	822	n a	40	30	7 0	3 4	0	0.0	4	50	2 C 5 7	22	35	כינ	3.5	22	00	0.2	7	25
CalCOFI Cru	Tow Date yr. mo. day	75 05 09	75 05 10	5 05 1	5 05 1	5 (5) 1	5 05 1	5 05 1	5 05 1	5 U5 1	5 05 1	5 05 1	000	5 05 1	5 05 1	5 05 1	5 05 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 05 1	5 05 1	5 05 1	5 05 1	5 05 1	5 05 1	5 05 1	5 05 1	20 0 7 1 7 0 7	5 05 1	5 05 1	000	000	5 05 1	5 05 1	5 05 1	0.00	0 0 2 1
	Ship		ar ar	JD	JD	9	30	JD	JD		JD OF	db er	<b>D</b> L		J.D	JD	di di	gr.	JD JD	JD	de de	ar ar	JD	9	an	JD		JD	JD GE	35	an an	JD	JD	OF CE	200	JD
	Long.(W) deg. min.	21 43.	122 23.0	23 06.	23 48.	24 30.	21 28.	21 57.	22 19.	22 40.	24 04.	20 43.	20 26.	21 13.	21 55.	22 16.	22 57.	23 39.	20 33.	20 35.	20 40.	20 48.	21 09.	21 51.	23 14.	19 47.	19 49.	19 54.	19 58.	20 02.	19 24.	19 26.	19 30.	19 34.	19 41.	19 42.
	Lat.(N) deg. min.	6 11.3	35 53.0	5 33.	5 13.	4 53.	5 31.	5 17.	5 08.	4 58.	4 18.	5 08.	S UI.	4 04.	4 34.	4 23.	4 04.	4 43.	4 26.	4 24.	23.	4 19.	4 09.	3 48°	3 07.	4 24.	4 7 5.	4 21.	4 19.	4 1 V	4 12.	4 11.	4 09.	4 08.	4 04.	4 03.
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Total Eggs	120 110 110 110 110 110 110 110 110 110	
Total Larvae		-
Percent Sorted		00.
Stand- ard Haul Factor	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	9
Vol. Water Strained (cu. m)	33 33 34 35 36 37 37 38 38 38 38 38 38 38 38 38 38	1 ~
Tow Depth	22222222222222222222222222222222222222	
Time (PST)	- 860-560467-6707-68997-4-85-04068950-6-6-6-7-8-7-8	74
Tow Date yr. mo. day	775 05 16 775 05 19 775 05 20 775 05 20 777 05 20	5 05 2
Ship		200
Long.(W) deg. min.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	21 19.
Lat.(N) deg. min.	80000000000000000000000000000000000000	44.
Station	44000000000000000000000000000000000000	
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CalCOFI Cruise 7505

	Total	7	3066	42	9	70	00	1 4	7		m -	10	70	· -				φ (		11		2	384	2/0	40	5									- 0	VU	166	0		
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cnc	Tow Depth		148	0		0			0	0			00	0	0	0	$\overline{}$	0		7 4		$\vdash$			4 0	> ~	-	0	0	> -	40	10	-	$\overline{}$	5	0		10	0	
ruise	Time (PST)	32	0944	73	19	43	79	000	93	11	03	77	73	37	0	53	02	85	64	200	22	35	92	000	04	25	50	80	02	32	27	000	43	90	44	34	20	3 (2)	02	
Calcori Cr	Tow Date yr. mo. day	5 05 2	75 05 24	5 05 2	5 05 2	5 05 2	5 05 2	5 00 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 Z	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 Z	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 00 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	5 05 2	
	Ship	JD	an an	dr dr	JD	JD	db dr	בי. בי	a C	JD	JD	d i	g F	G.	JD OF	JD	JD	JD	JD	ar ar	G.F.	JD	JD	JD	dr dr	ar.	JD	JD	JD	JD GI	מנ	ar.	JD	JD	JD.	db ii	OP OF	ID CI	JD	
	Long.(W) deg. min.	22 01.	117 27.7	17 34.	17 38.	17 42.	17 17.	17 23	17 26.	17 31.	17 51.	18 11.	18 32.	10 13	19 34.	20 14.	20 54.	21 34.	17 10.	17 14.	17 27	17 18.	17 04.	17 04.	17 07.	17 15	17 27.	17 48.	18 08.	18 30.	16 48.	19 50.	20 31.	21 10.	16 4 3.	16 46.	16 50.	17 07.	17 27.	
	Lat.(N) deg. min.	1 24.	33 14.7	3 11.	3 09.	3 07.	2 57.	2 50.	2 52	2 50.	2 40.	2 30.	2 20.	0 T 7	1 50.	1 30.	1 10.	0 50.	2 37.	2 35.	2 23 .	2 33.	2 17.	2 17.	2 16.	2 13.	2 05.	1 56.	1 46.	1 36.	.07 [	7 7 0	0 35.	0 16.	1 42.	1 40.	38.	30.	1 21.	
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Total	1359 1359 11445 11745 11745 11745 1175 1175 1178 1178 1178 1178
Total Larvae	253 267 267 267 267 267 267 267 278 278 278 278 279 270 270 270 270 270 270 270 270
Percent Sorted	255.0 225.0
Stand- ard Haul Factor	2222223325 2322223325 23222233325 23222233325 232222333325 23222233333325 23222233333335 23222233333335 23222233333333
Vol. Water Strained (cu. m)	622 695 695 695 1993 1994 1995
Tow Depth (m)	22000 22000 2110 2110 22112 2212 2202 2203 2203
Time (PST)	11553 11553 116564 1100640 1100640 11006 1006 100
Tow Date yr. mo. day	75 05 28 75 05 28 75 05 28 75 05 28 75 05 28 75 05 29 75 05 29 75 05 29 75 05 29 75 05 29 75 05 31 75 05 31 75 06 01 75 06 01 75 06 01 75 06 03 75 06 03 76 06 03 77 06 03 77 06 03 77 06 03 77 06 03
Ship	555555555555555555555555555555555555555
Long.(W) deg. min.	118 47.5 119 27.5 119 27.5 110 20.0 116 20.0 116 22.5 1116 22.5 1116 46.3 117 24.5 1117 24.5 1118 41.0 1119 05.0 1119 05.0 1119 05.0 1116 19.3 1116 19.3 1116 19.3 1116 19.3 1116 19.3 1117 25.0 1118 41.0 1119 40.0 1117 25.0 1118 41.0 1118 18.0 1115 13.6 1115 13.6 1115 13.6
Lat.(N) deg. min.	
Station	0.000 0.000
Line 2	
	Vol. Stand- Tow Water ard Lat.(N) Long.(W) Ship Tow Date Time Depth Strained Haul Percent Total Tota ine Station deq. min. Gode yr. mo. day (PST) (m) (cu. m) Factor Sorted Larvae Eggs

	Total Eggs	2 3 3 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
	Total	25 11 37 37 45 118 110 277 27 27 27 47 110 153 100 2060 116 118 326 110 2060 116 116 117 110 2060 116 117 118 119 2060 110 2050 110 110 110 110 110 110 110 110 110	
	Percent Sorted	255.0 255.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0	
	Stand- ard Haul Factor	33.14 33.14 34.05 35.05 36.05 37	
	Vol. Water Strained (cu. m)	656 668 668 668 668 668 688 77 70 688 77 77 688 77 77 77 77 78 77 78 77 78 77 78 77 78 77 78 77 78 77 78 77 78 77 78 78	1
7505	Tow Depth (m)	201000 201000 2010000 2010000 2010000 201000 201000 201000 201000 201000 201000 201000 201000 201000 201000 201000 201000 2010000 201000 201000 201000 201000 201000 201000 201000 201000 2010000 201000 201000 201000 201000 201000 201000 201000 201000 2010000 201000 201000 2010	1
uise	Time (PST)	0610 0115 010315 010315 01038 11026 11026 01135 11353 1136 0144 0144 0144 0144 0144 0144 0144 014	3
CalCOFI CI	Tow Date yr. mo. day	755 06 06 06 06 06 06 06 06 06 06 06 06 06	
	Ship	222222222222222222222222222222222222222	2
	Long.(W) deg. min.		. 0
	Lat.(N) deq. min.	88888888888888888888888888888888888888	. 77 0
	Station	44000000000000000000000000000000000000	0
	Line		20.

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	Total Eggs	116 116 126 137 137 148 148 148 148 148 148 148 148 148 148
	Total Larvae	100 100 100 100 100 100 100 100 100 100
	Percent Sorted	255.0 255.0
	Stand- ard Haul Factor	22222222222222222222222222222222222222
	Vol. Water Strained	11827 44250 7220 7220 7220 7220 7220 7220 7220 7220 7220 7231
507	Tow Depth	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
lise 7	Time (PST)	11754 11703
CalCOFI Cru	Tow Date yr. mo. day	75 07 17 75 07 17 75 07 17 75 07 17 75 07 18 75 07 18 75 07 18 75 07 18 75 07 18 75 07 16 75 07 16 75 07 16 75 07 16 75 07 16 75 07 11 75 07 11 75 07 09 75 07 09 76 07 09 77 07 09 78 07 09 78 07 09 78 07 09 78 07 09 79 07 09 79 07 09
	Ship Code	666666666666666666666666666666666666666
	Long.(W) deg. min.	1222 53.1 1223 37.0 1223 37.0 1223 37.0 1224 37.0 1225 56.0 1222 56.0 1221 54.0 1221 57.0 1221 57.0
	Lat.(N) deg. min.	337 257.3 337 257.3 337 257.3 337 257.0 336 557.0 337 277.0 337 277.0 337 277.0 337 277.0 337 277.0 338 277.0 339 277.0 330 277.0 330 277.0 331 277.0
	tation	887878989898989898989898989898989898989
	Line S	660.0 660.0 660.0 660.0 660.0 660.0 660.0 660.0 660.0 660.0 777.0 777.0 777.0 777.0 777.0 777.0 880.0 880.0 880.0

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	Total Eggs	4177 4877 4877 4877 4877 4877 1034	3
	Total Larvae	88 222 24 4 2 6 6 8 8 9 2 2 2 2 2 6 8 9 8 2 2 2 2 8 8 9 2 2 2 2 2 9 9 8 9 8	
	Percent Sorted	1000.0 10	00.
	Stand- ard Haul Factor	23222222222222222222222222222222222222	.2
	Vol. Water Strained (cu. m)	7.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
7507	Tow Depth	209 209 209 209 209 209 209 209 201 201 201 201 201 201 201 201 201 201	
ruise	Time (PST)	1163226 117512333 117512336 117512336 1175126 1175126 11751	64
CalCOFI Cru	Tow Date yr. mo. day	755 07 08	5 07 0
	Ship	666666666666666666666666666666666666666	JD JD
	Long.(W) deg. min.	1119 199 59 59 59 59 59 59 59 59 59 59 59 59 5	18 09.
	Lat.(N) deg. min.	N = N +	3 40.
	station	0.000000000000000000000000000000000000	
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Total	159 8 809 144 8 113 173 173 173 173 173 173 173 173 173	
Total Larvae	4 4 6 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
Percent Sorted	255.00 250.00	
Stand- ard Haul Factor	22222222222222222222222222222222222222	
Vol. Water Strained (cu. m)	130 659 701 701 701 701 701 701 701 701 701 701	
Tow Depth	22 22 22 22 22 22 22 22 22 22 22 22 22	
Time (PST)	1180 1180 1180 1180 1180 1180 1180 1180	
Tow Date yr. mo. day	75 06 25 25 25 26 25 26 25 26 25 26 25 26 26 27 25 06 27 25 06 27 25 06 27 25 06 26 26 26 26 26 26 26 26 26 26 26 26 26	
Ship	666666666666666666666666666666666666666	
Long.(W) deg. min.	1118 113.5 1118 12.5 1117 445.4 1117 445.7 1117 445.7 1117 53.0 1118 52.5 1117 229.6 1117 229.6 1117 229.6 1117 229.6 1117 229.6 1117 220.0 1117 220.0 1118 11.5 1117 21.0 1117 21.0 1117 22.7 1117 22.7 1117 22.7 1117 135.0 1117 140.6 1117 120.3	
Lat.(N) deg. min.		
Station	333309880000886009886099886099886009988600099886009988600099886000998860009988600000000	
Line	99999999999999999999999999999999999999	

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	Total Eggs	1100 1100 1100 1100 1100 1100 1100 110
	Total Larvae	42.7 42.7 44.7 44.7 45.7 46.7 46.7 46.7 46.7 46.7 46.7 46.7 46
	Percent Sorted	255.0 1000.0 100
	Stand- ard Haul Factor	12222222222222222222222222222222222222
	Vol. Water Strained	622 887 887 887 887 887 887 887 8
507	Tow Depth	22222222222222222222222222222222222222
uise 7	Time (PST)	1450 00425 00115 0
CalCOFI Cru	Tow Date	75 06 24 77 06 24 77 06 24 77 06 24 77 06 25 77 06 25 77 06 25 77 06 25 77 06 27 77 06 27 77 06 27 77 06 28 77 07 01 77 07 01 78 06 30 77 07 01 77 07 01 78 06 30 78 07 01 78 06 30 79 07 01 77 07 01 77 07 01 78 06 30 78 07 01 78 06 30 78 07 01 78 07 01 78 07 01 78 07 01 78 06 30 78 07 01
	Ship Code y	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
	Long. (W) deg. min.	1117 48 1118 086.0 1119 100.0 1119 100.0 1120 132.5 1116 540.5 1116 540.5 1116 540.5 1116 540.5 1116 540.5 1116 540.5 1116 540.5 1116 540.5 1116 540.5 1116 11.3 1116 11.3 1116 11.3 1116 11.3 1116 11.3 1116 11.3 1116 11.3
	Lat.(N) deg. min.	331 256.50 331 257.50 331 256.50 331 257.50 331 256.50 331 25
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	Long. (W)	eg. m.	15 52.	15 55.	15 59.	16 40.	16 59.	17 18.	17 38.	18 19.	16 50.	15 13.	15 17.	15 21.	15 25.	15 56.	16 16.	16 36.	17 16.	17 54.	18 32.	14 41.	14 44.	14 48.	15 16.	15 35.	15 56.	16 15.	17 32.	18 10.	15 24.	14 53.	14 05.	14 07.	14 IU.	114 14.0	14 34.	* F.C F.T
		9. III	9 49.	9 48.	9 46.	96.0	9 16.	90 6	8 58.	8 37.	0 75	9 24	9 22.	9 20.	9 17.	0 L3.	8 52.	8 41.	8 22.	8 02.	/ 42. 8 58	8 55.	8 53.	8 51.	38.	8 28.	8 17.	8 07.	7 27.	7 08.	8 18.	28 19.	8 27.	8 27.	8 25.	28 20.9	8 14.	0 03.
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	Total	2 2 1201122 1205114412 1205011 1205011 130800 1005011 10033	
	Total Larvae	1 1 2 2 3 3 4 4 4 5 3 3 3 4 4 4 5 3 3 3 4 4 4 5 3 3 3 4 4 4 5 3 3 3 4 4 4 5 3 3 3 4 4 4 5 3 3 3 4 5 3 3 4 5 3 3 4 5 5 3 3 4 5 5 3 3 5 5 3 3 5 5 3 3 5 5 3 5 5 3 5 5 3 5 5 5 3 5	
	Percent	1000 1000 1000 1000 1000 1000 1000 100	
	Stand- ard Haul Factor	1.0222111222222222222222222222222222222	
	Vol. Water Strained (cu. m)	11 888333	
205	Tow Depth	22222 2222 2222 2222 2222 2222 2222 2222	
lise 7	Time (PST)	11105 11720	
CalCOFI Cru	Tow Date r. mo. day	75 07 09 09 09 09 09 09 09 09 09 09 09 09 09	
	Ship Code y	**************************************	
	Long.(W) deg. min.	115 13 13 13 11 12 34 5 5 11 12 34 5 11 12 34 5 11 14 4 4 5 11 14 4 4 6 11 15 11 14 1 14	
	Lat.(N) deg. min.	22	
	Station	650 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	Line	1220.00 1220.0	

	-	Eggs	091	1637	73	18	11	101	81	41	397
			N	_							
	E	Larvae	91	492	30	53	34	71	45	96	32
		Sorted	100.0	100.0	100.0	25.0	25.0	25.0	25.0	100.0	100.0
	Stand- ard	121	1.44	2.16	2.35	2.66	2.54	3.21	2.74	2.85	2.77
	Vol.	(cu. m)	88	150	256	286	804	632	764	732	772
7507	Tow	(m)	13	32	09	92	204	203	209	209	214
	E	(PST)	1146	1248	1344	1441	1756	2110	0034	0526	11119
CalCOFI Cruise	E	row Date yr. mo. day	0.2	0.7	0.7	75 07 14	0.7	07	07	0.7	0.3
		Code	AX								
		deg. min.	112 09.9	112 14.7	112 18.7	112 22.8	112 45.6	113 04.5	113 23.5	114 02.0	114 39.5
		deg. min.				25 31.8					
		Station	20.7	22.0	23.0	24.0	30.0	35.0	40.0	50.0	0.09
		Line	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0	137.0

	Total	90 10 10 10 10 10 10 10 10 10 10 10 10 10	13
	Total	1411 1411 1001 1001 1001 1000 1130 1130	32
	Percent Sorted	25.0 25.0 25.0 25.0 25.0 25.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0	0
Stand-	<b>三</b> 何	22222222222222222222222222222222222222	. 7
vol.	Water Strained (cu. m)	155 155 156 156 157 157 157 157 157 157 157 157 157 157	(1)
016/	Tow Depth	2002 2003 2003 2003 2003 2003 2003 2003	0
1186	Time (PST)	00415 003043 003069 001023 114243 114253 114253 11734 11735 11725 11725 11725 11725 11725 11725 11725 11725 11725 11725 11725 11725 11725 11736 11737	14
calcori crui	Tow Date yr. mo. day	75 10 27 75 10 27 75 10 27 75 10 27 75 10 27 75 10 27 75 10 26 75 10 26 75 10 26 75 10 23 75 10 22 75 10 20 75 10	5 10 1
	Ship	**************************************	AX
	Long.(W) deg. min.	117 04.0 117 04.0 117 13.0 117 13.0 117 27.1 118 30.5 118 30.5 118 30.5 119 50.1 110 54.8 116 54.8 117 07.0 118 05.0 118 05.0 119 27.5 110 29.8 111 20.0 110 20.0 111 20.0 111 20.0 111 20.0 112 20.0 113 20.0 114 44.0 115 05.0 116 05.0 117 43.0 118 24.5 119 04.2 110 05.4	16 19.
	Lat.(N) deg. min.	32 18 32 17.5 332 17.5 332 17.5 332 12.2 331 26.2 331 26.2 331 36.2 331 36.5 331 36.5 341 36.5	0 21.
	tation	2288 330.00 331.00 331.00 331.00 331.00 331.00 331.00 331.00 331.00 331.00 331.00	o 4'
	Line S	97.0 97.0 97.0 97.0 97.0 97.0 97.0 100.0	07.

Total Eggs	100 100 100 100 100 100 100 100 100 100	
Total Larvae	110 110 110 110 110 110 110 110	
Percent Sorted	255.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0	25.
Stand- ard Haul Factor	23222222222222222222222222222222222222	. 6
Vol. Water Strained	22244 2333 244 254 254 254 254 254 254 254	20 -
Tow Depth (m)	2011 2007 2007 2007 2008 2009 2009 2009 2009 2009 2009 2009	90
Time (PST)	00352 00352 00352 00352 00352 00352 00352 00333 005332 005332 005332 005332 005332 005332 005332 005332 005332 00532 00532 00532 00532 00532	30
Tow Date	75 10 19 75 10 19 75 10 19 75 10 19 75 10 19 75 10 19 75 10 18 75 10 15 75 10 16 75 10 16	5 10 1
Ship Code	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	AX
Long.(W) deg. min.	1116 22.8 1118 02.1 1118 02.1 1119 18.9 1119 18.9 1115 52.0 1115 52.0 1115 52.0 1115 52.0 1116 39.5 1117 55.0 1118 18.0 1118 13.7 1118 18.0 1119 18.0 1114 41.0 1114 45.0 1115 56.0 1116 54.2 1117 56.0	15 23. 14 53.
Lat.(N) deg. min.	230 229 330 20.8 229 350.9 250 250 250 250 250 250 250 250 250 250	8 18. 8 19.
Station	88000000000000000000000000000000000000	9.6
Line	107.0 107.0 107.0 107.0 107.0 1110.0 1110.0 1113.0 1117.0 1117.0 1117.0	9.6

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	Total Eggs	2
	Total	37 38 38 38 38 1087 1087 1087 225 225 335 119 119 326 335 335 335 335 335 335 335 335 335 33
	Percent	1000 1000 1000 1000 1000 1000 1000 100
	Stand- ard Haul Factor	11122222222222222222222222222222222222
	Vol. Water Strained	23 23 313 24 313 314 315 316 317 318 317 318 317 318 318 32 32 33 33 33 33 33 33 33 33
510	Tow Depth	2222 2223 2223 2223 2233 2233 2233 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 2333 233
iise 7	Time (PST)	00000 000000
CalCOFI Cru	Tow Date yr. mo. day	75 10 15 75 10 15 75 10 15 75 10 14 75 10 14 75 10 14 75 10 14 75 10 11 75 10 11 75 10 10 75 10 10 75 10 10 75 10 08 75 10 08
	Ship	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
	Long. (W) deg. min.	1114 004.4 1114 105.5 1114 106.8 1115 144.0 1115 144.0 1116 311.0 1117 105.0 1117 106.0 1118 106.0 1118 106.0 1119 106.0 119 106.0 119 106.0 119 106.0 119 106.0 119 106.0 119 106.0 119 106.0 119 106
	Lat.(N) deg. min.	28 28 28 28 28 28 28 28 28 28 28 28 28 2
	Station	22222222222222222222222222222222222222
	Line	120.0 120.0 120.0 120.0 120.0 120.0 120.0 120.0 123.0 127.0 127.0 127.0 127.0 127.0 127.0 127.0 127.0 127.0 127.0 127.0 127.0

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Total Eggs	582 882 882 81 1122 117 111 117 117 117 117 117 117 1	62
Total	16 17 18 19 19 19 19 19 19 19 19	59
Percent Sorted	100.0 100.0 100.0 25.0 25.0 100.0 100.0 100.0 100.0 100.0	100.0
Stand- ard Haul Factor	2.41 2.41 2.41 2.76 2.76 2.98 11.89 2.96 2.97 2.97 3.152	3.08
Vol. Water Strained (cu. m)	267 349 314 314 758 723 723 159 189 235 616 616 755	889
Tow Depth	72 844 810 2112 2112 2217 2208 221 14 14 177 209 203	212
Time (PST)	0542 0620 0728 1020 1810 0810 0158 0755 2331 2023 1755 11433 1204	0013
Tow Date yr. mo. day	75 10 06 75 10 06 75 10 06 75 10 06 75 10 07 75 10 07 75 10 05 75 10 05 75 10 05 75 10 05 75 10 05 75 10 05	5 10
Ship	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	AX
Long.(W) deg. min.	1112 40.3 1112 44.6 1112 48.0 1113 07.4 1113 26.5 1115 02.0 1115 09.4 1112 14.9 1112 23.2 1112 24.3 1113 04.5 1113 04.5	
Lat.(N) deg. min.	26 08.5 26 06.5 26 04.6 25 54.4 25 14.5 25 14.5 25 14.5 25 34.6 25 36.3 25 32.6 25 32.6 26 00.5	4 19
Station	2223 2223 2223 2223 2233 2233 2333 233	60.0
ne	000000000000000000000000000000000000000	0.0

CalCOFI Cruise 7511

Total	58	50	e (a)	180		សា		209		000		00		<u> </u>	ם ר	4	0 4 2		~	16	70	200	- 7		)		, ,		
Total Larvae	25	mæ	0 0	23	00	7		42	m :	r n	n m		16		7 7	, LO	0 [		4 4		18	10	96	n -	0		19		
Percent Sorted	25.0	5.	5		5	5	5.	, r	2	ų, r	2	υ, u		5	ı,	0	5	5	N.	00.	0	25.	5.4	د	5.	25.	0.0	00.	5
Stand- ard Haul Factor	2.53	9.5	ο, α	0.	0.0	7	9.	4.0	6	00,	.7	9.	٠,٠	.7	9.0	, 80	9.	0.	80	0 00	9.	20.	9.	0 0	9	φ, ο	.7	9.	9.
Vol. Water Strained (cu. m)	138	$\infty$	90	001	50	2	792	9 4	(1)	50 4	20	6	20	9	7	7	1	00	9	9	4	20	758	DI	7	4	10	349	70
Tow Depth	35	$\infty$ $\bigcirc$		7	7	1			7	-		-	NO	1	0 -		0	-			-	7		> -		peri p		6 -	
Time (PST)	0330	03	90	30	012	50	73	85	52	22	63	23	44	12	02	21	83	0.5	32	14	65	34	91	0 1 2 E	02	92	74	84	0.5
Tow Date yr. mo. day	75 11 14 75 11 14	5 11 1 5 11 1	5 11 1	5 11 1	5 11 1	5 11 1	5 11 1 5 11 1	5 11 1	5 11 1	5 11 1	5 11 1	5 11 1	5 11 1	5 11 1	5 11 1	5 11 0	5 11 0	5 11 0	5 11 0	5 11 0	5 11 0	5 11 0 5 11 0	5 11 0	5 11 0	5 11 0	5 11 0	5 11 0	5 11 0 5 11 0	5 11 0
Ship	db db	25	dr dr	ar	db dr	ar ar	00 00	J.D.	JD JD	dr er	ar ar	JD	91.	JD JD	dr dr	an an	30	dr dr	as as	dr dr	JD	99	dr dr	95	200	ar ar	ar ar	GF.	an
Long.(W) deg. min.	33	23 15.	24 00.	22 28.	22 36.	23 10.	23 33.	22 01.	22 26.	22 47.	23 29.	21 43.	21 53.	22 45.	23 06.	24 30.	21 17.	21 28.	22 18.	23 22.	24 03.	20 43.	21 13.	21 34.	22 16.	22 56.	20 29.	20 32.	20 40.
Lat.(N) deg. min.	37 57.4 37 52.5	7 47.	7 27.	7 23.	7 19.	7 03.	6 53. 6 43.	6 53.	6 39.	6 28.	6 08.	6 11.	6 06. 5 53	5 43.	5 33.	4 53.	5 37.	5 18.	5 08.	4 39.	4 18.	5 08.	4 54.	4 43.	4 24.	4 03.	4 28.	4 26.	4 22.
Station	50.0	50		. 0	2.2	0	00	00	5.	0	20		m c		0		0	70	· ·	0	0	 	50	O u		0.		-	· m
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CalCOFI Cruise 7511

Total Eggs	11 12 12 12 13 14 16 17 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19
Tota! Larvae	100 100 100 100 100 100 100 100 100 100
Percent Sorted	25.0 25.0 25.0 25.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0
Stand- ard Haul Factor	23333332222222222222222222222222222222
Vol. Water Strained	704 776 776 7770 7770 7770 7770 7770 777
Tow Depth (m)	2202 2003 2009 2009 2009 2009 2009 2009
Time (PST)	11200 0320 0320 0320 00150 00150 00255 00255 00255 00255 00255 0020 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000
Tow Date yr. mo. day	75 11 04 75 11 04 75 11 05 75 10 26 75 10 25 75 10
Ship Code	888888888888888888888888888888888888888
Long.(W) deg. min.	120 444 5 1220 488.2 1220 488.2 1221 51.0 099.0 1122 311.7 122 311.7 122 311.7 120 54.0 1119 54.0 1119 54.0 1119 54.0 1119 54.0 1119 54.0 1119 54.0 1119 54.0 1119 55.1 1118 55.1 118 55.1 1
Lat.(N) deg. min.	33333333333333333333333333333333333333
Station	00000000000000000000000000000000000000
Line	880.00 881.55 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00 883.00

		Eggs	ω.	0	636	09	mc		90		8	4.0	3 2		0	2			70		1		7			76				4	7	0			2		189		
		Total T Larvae E	38		0			D L		9																0				C C		22		- 9	m		420		
		Sorted	00.	0	00.	00		.07	. 0	25.	25.	0	00.	2 6	5	25.	00.	00.	00		25.	5	25.	0 4	00.		00.	o v		0.	25.	000	000		000	0	100.0		
	and-	Factor	0.	-0	.2	9 .	ن و	9 4	.7	6	8	φ,	000	0 00	0	9	8	1.	9 4	0 1	, ω	0	0.	9.	- 6	0	00 1	· a	. 7	. 7	۳.	.7		ο α		6.	1.98	.0.	
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7511	TOW	Depth (m)	218		21	3	210	40	97	-	204	-	0 -	40	-	-	0	_	0 -	L 3		213	-	21	\ ~	212	0	0 -	10	0	0	-1	<b>⊣</b> ¢	> ~	-	m	113		
uise	i	Time (PST)	12	94	85	74	61	42	30	14	00	81	63	200	73	34	82	31	10	4 5	222	00	14	63	70	80	09	50		52	82	04	200	J C	73	93	2042	35	
CalCOFI Cru		Tow Date	5 10 2	5 10 2 5 10 2	5 10 2	5 10 2	5 10 2	2 10 2	5 10 Z	5 10 2	5 10 2	5 10 2	5 10 2	7 11 0	5 11 0	5 11 0	5 11 0	5 11 0	5 11 0	2 01 6	5 10 2	5 10 2	5 10 2	5 10 2	2 10 2	5 10 2	5 10 2	5 10 2	5 10 2	5 10 2	5 10 2	5 11 0	5 11 0	5 11 0	5 10 2	5 10 2	75 10 20	5 10 2	
		Ship Code y	JD	g,	as as	JD	dr dr	UD GE	g r	30	JD	JD	g f	3 5	GF.	JD	JD	JD	6	d L	35	30	J.D	ag f	3 =	25	JD	25	a C	JD	JD	JD	ag f	g E	ar.	JD	an an	J.D.	
		Long. (W) deg. min.	21 42.	22 24.	18 09.	18 13.	18 17.	18 21.	17 45.	17 49.	17 53.	17 57.	18 01.	10 22.	19 28	19 57.	20 38.	21 19.	22 01.	17 71	17 34.	17 38.	17 42.	17 17.	17 71	17 26.	17 31.	17 52.	18 32	18 52.	19 13.	19 34.	20 14.	20 24.	17 10.	17 14.	117 18.5	17 27.	
		Lat.(N) deg. min.	2 19.	2 00.	3 40.	3 38.	3 36.	3 34.	3 29.	3 27	3 25.	3 23.	3 21.	3 LI.	2 30	2 24.	2 04.	1 45.	1 24.	3 14.	3 17	3 09.	3 07.	2 57.	2 56.	2 52.	2 50.	2 40.	2 20.	2 10.	2 00.	1 50.	30.	50.	2 37	2 35.	32 33.2	2 29.	
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CalCOFI Cruise 7512

Total Eggs	1002 1007 1007 1008 1008 1008 1008 1008 1008	200
Total Larvae	22 22 32 32 32 33 33 34 35 35 36 36 37 36 37 37 38 38 38 38 39 30 30 30 30 30 30 30 30 30 30 30 30 30	150
Percent Sorted	1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0	25.
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Tow Depth	23 5 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
Time (PST)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31 03 15
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Long.(W) deg. min.	00048000008400888000000000000000000000	17 17. 17 18. 17 21.
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CalCOFI Cruise 7512

Total	157 105 129 161 173
Total Larvae	33 39 24 48 33 33
Percent Sorted	25.0 25.0 25.0 25.0 25.0
Stand- ard Haul Factor	3.16 3.01 2.78 2.98 3.00
Vol. Water Strained (cu. m)	672 689 716 715 711
Tow Depth (m)	213 208 199 213 214 218
Time (PST)	0315 0445 1700 1415 1120 1625
Tow Date yr. mo. day	75 12 09 75 12 09 75 12 14 75 12 14 75 12 14 75 12 13
Ship Code	999999
Long.(W) deg. min.	117 26.6 117 31.0 117 51.5 118 11.5 118 32.0 118 52.5
Lat.(N) deg. min.	32 52.7 32 50.5 32 40.0 32 30.0 32 20.0 32 10.0
Station	29.0 30.0 35.0 40.0 45.0
Line	00.00

TABLE 2A. Pooled occurrences of fish larvae taken during CalCOFI cruises in 1974.

Rank	Taxon	Occurrences
1	Engraulis mordax	155
2	Citharichthys spp.	96
3	Sebastes spp.	94
4	Sternoptychidae	63
5	Protomyctophum crockeri	62
6	Sciaenidae	58
7	Leuroglossus stilbius	52
8	Vinciguerria lucetia	48
9	Triphoturus mexicanus	38
10	Lampanyctus spp.	35
11	Citharichthys stigmaeus	33
12	Cyclothone spp.	30
13	Diogenichthys laternatus	29
13	Stenobrachius leucopsarus	29
15	Disintegrated fish larva	27
16	Tarletonbeania crenularis	26
16	Gobiidae	26
18	Paralichthys californicus	25
19	Diogenichthys atlanticus	22
20	Unidentified fish larva	21
21	Idiacanthus antrostomus	18
22	Lestidiops ringens	16
22	Merluccius productus	16
24	Bathylagus wesethi	15
25	Symbolophorus californiensis	14
26	Bathylagus ochotensis	13
27	Myctophidae	12
28	Lampanyctus ritteri	11
28	Sardinops sagax	11
30	Chauliodus macouni	10
30	Sebastes paucispinis	10
30	Gonostomatidae	10
33	Gonichthys tenuiculus	9
33	Melamphaes spp.	9
33	Stomias atriventer	9
33	Clinidae	9
37	Hippoglossina stomata	8
37	Nansenia crassa	8
37	Symphurus spp.	8
37	Microstoma microstoma	8 8 7
37	Tetragonurus cuvieri	8
42	Synodus spp.	
42	Trachipteridae	7
42	Rosenblattichthys volucris	7
45	Ophidion scrippsae	6 6
45	Peprilus simillimus	6
45	Hypsoblennius spp.	6
45	Myctophum nitidulum	р

TABLE 2A. (cont.)

Rank	Taxon	Occurrences
45	Danaphos oculatus	6
45	Diogenichthys spp.	6
45	Argentina sialis	6
45	Icichthys lockingtoni	6
45	Hygophum atratum	6
45	Parophrys vetulus	6
55	Hypsopsetta guttulata	5
55	Ceratoscopelus townsendi	5
55	Paralepididae	5 5 5
55	Cottidae	5
55	Chiasmodontidae	
55	Bathylagus milleri	5
61	Scopelogadus bispinosus	4
61	Xystreurys liolepis	4
63	Atherinidae	3
63	Syngnathus spp.	3
63	Macroramphosus gracilis	3
63	Scorpaenichthys marmoratus	3 3 3 2 2 2
67	Anguilliformes	2
67	Lampadena urophaos	2
67	Zaniolepis spp.	2
67	Pleuronichthys ritteri	2
71	Ceratioidei	1
71	Sebastolobus spp.	1
71	Pleuronichthys decurrens	1
71	Macropinna microstoma	1
71	Scopelosaurus spp.	1
71	Lepidopus xantusi	1
71	Cyclopteridae	1
71	Ichthyococcus spp.	1
71	Pleuronichthys spp.	1
71	Agonidae	1
71	Lampanyctus regalis	1
71	Blennioidei	1
71	Coryphaena hippurus	1
71	Microstomus pacificus	1
71	Sebastes jordani	1
71	Stomiiformes	
71	Bathylagus spp.	1
71	Bathylagus pacificus	1
71	Pleuronichthys verticalis	1
71	Cololabis saira	1

TABLE 2B. Pooled occurrences of fish larvae taken during CalCOFI cruises in 1975.

Rank	Taxon	Occurrences
1	Engraulis mordax	842
2	Sebastes spp.	560
3	Leuroglossus stilbius	363
4	Citharichthys spp.	357
5	Stenobrachius leucopsarus	351
6	Triphoturus mexicanus	342
7	Protomyctophum crockeri	299
8	Merluccius productus	279
9	Bathylagus ochotensis	273
10	Sciaenidae	260
11	Sternoptychidae	218
12	Tarletonbeania crenularis	215
13	Disintegrated fish larva	196
14	Unidentified fish larva	183
15	Cyclothone spp.	165
16	Vinciguerria lucetia	164
17	Bathylagus wesethi	156
18	Lampanyctus spp.	151
19	Lampanyctus ritteri	149
20	Diogenichthys atlanticus	141
21	Citharichthys stigmaeus	133
22	Melamphaes spp.	130
23	Gobiidae	121
24	Symbolophorus californiensis	120
25	Trachurus symmetricus	119
26	Diogenichthys laternatus	114
27	Paralichthys californicus	106
28	Pleuronichthys verticalis	100
29	Hypsoblennius spp.	82
30	Myctophidae	80
31	Chauliodus macouni	78
32	Sebastes paucispinis	73
33	Diaphus spp.	70
34	Clinidae	67
35	Ceratoscopelus townsendi	66
36	Stomias atriventer	59
36	Argentina sialis	59
38	Serranidae	55
39	Peprilus simillimus	54
40	Sardinops sagax	51
41	Parophrys vetulus	50
42	Danaphos oculatus	49
43	Icichthys lockingtoni	46
44	Cottidae	44
45	Sebastes jordani	42
46	Synodus spp.	41
46	Bathylagus spp.	41
48	Microstoma microstoma	40

# TABLE 2B. (cont.)

Rank	Taxon	Occurrences
49	Bathylagus pacificus	39
49	Lestidiops ringens	39
51	Hippoglossina stomata	36
52	Pleuronichthys ritteri	33
53	Idiacanthus antrostomus	30
54	Lampanyctus regalis	29
55	Symphurus spp.	26
55	Halichoeres spp.	26
55	Nansenia candida	26
58	Rosenblattichthys volucris	23
58	Zaniolepis spp.	23
58	Oxyjulis californica	23
58	Sebastolobus spp.	23
62	Myctophum nitidulum	22
62	Chromis punctipinnis	22
64	Sebastes macdonaldi	21
65	Lyopsetta exilis	20
66	Scopelarchus spp.	19
67	Trachipteridae	18
67	Ophidion scrippsae	18
67	Poromitra spp.	18
70	Sebastes levis	17
70	Paralepididae	17
70	Nansenia crassa	17
70		17
74	Chilara taylori	
	Hygophum atratum	16
75	Tetragonurus cuvieri	15
75 75	Ophidiiformes	15
	Scorpaenichthys marmoratus	15
75	Etrumeus acuminatus	15
75	Diogenichthys spp.	15
80	Gonichthys tenuiculus	14
81	Bathylagus milleri	13
81	Cyclopteridae	13
81	Sebastes aurora	13
81	Notolychnus valdiviae	13
85	Prionotus spp.	12
85	Xystreurys liolepis	12
85	Gonostomatidae	12
88	Chiasmodontidae	11
88	Ceratioidei	11
88	Agonidae	1 4
88	Scorpaena spp.	11
92	Scopelosaurus spp.	10
92	Lepidopus xantusi	10
92	Carangidae	10
92	Gobiesocidae	10
96	Sphyraena argentea	9
96	Microstomus pacificus	9

TABLE 2B. (cont.)

Rank	Taxon	Occurrences
96	Hygophum reinhardtii	9
99	Scomber japonicus	8
99	Anguilliformes	8
99	Semicossyphus pulcher	8
99	Hypsopsetta guttulata	8
99	Syngnathus spp.	8
99	Haemulidae	8
99	Ichthyococcus spp.	8
106	Electrona rissoi	7
106	Cololabis saira	7
106	Atherinidae	7
109	Notoscopelus resplendens	6
110	Brosmophycis marginata	
110	Seriola lalandi	5 5
110		5
110	Lampadena urophaos	2
	Notolepis risso	5 5 5
110	Scopelogadus bispinosus	5
110	Gerreidae	
116	Oxylebius pictus	4
116	Glyptocephalus zachirus	4
116	Blennioidei	4
116	Coryphaena hippurus	4
120	Benthalbella dentata	3
120	Benthosema pterota	3 3 3 3 3 3 3
120	Loweina rara	3
120	Sarda chiliensis	3
120	Medialuna californiensis	3
120	Pleuronichthys decurrens	3
120	Macrouridae	3
120	Hypsypops rubicundus	3
120	Lepidopsetta bilineata	3
120	Brama spp.	3 3 2
120	Pleuronichthys coenosus	3
131	Scopelarchidae	2
131	Psettichthys melanostictus	2
131	Caulolatilus princeps	2
131	Aristostomias scintillans	2
131	Scopelarchoides nicholsi	2
136	Valenciennellus stellatus	1
136	Pleuronichthys spp.	1
136	Anoplopoma fimbria	1
136	Scombridae	1
136	Icosteus aenigmaticus	1
136	Macropinna microstoma	1
136	Photonectes spp.	1
136	Diplophos taenia	1
136	Polynemidae	1
136	Girella nigricans	1
136	Platichthys stellatus	1

# TABLE 2B. (cont.)

Rank	Taxon	Occurrences
136	Howella brodiei	1
136	Exocoetidae	1
136	Opisthonema spp.	1
136	Ophiodon elongatus	1
136	Hexagrammidae	<u>1</u>
136	Stomiiformes	1

TABLE 3A. Pooled numbers of fish larvae taken during CalCOFI cruises in 1974. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	Engraulis mordax	39366
2	Sebastes spp.	6042
3	Citharichthys spp.	2306
4	Vinciguerria lucetia	1604
5	Sciaenidae	1350
6	Leuroglossus stilbius	1246
7	Diogenichthys laternatus	893
8	Protomyctophum crockeri	888
9	Stenobrachius leucopsarus	643
10	Sebastes paucispinis	628
11	Sternoptychidae	613
12	Citharichthys stigmaeus	552
13	Lampanyctus spp.	490
14	Tarletonbeania crenularis	487
15	Triphoturus mexicanus	371
16	Sardinops sagax	289
17	Bathylagus ochotensis	281
18	Cyclothone spp.	280
19	Diogenichthys atlanticus	261
20	Merluccius productus	209
21	Paralichthys californicus	204
22	Disintegrated fish larva	194
23	Gobiidae	177
24	Unidentified fish larva	153
25	Idiacanthus antrostomus	147
26	Bathylagus wesethi	141
27	Symbolophorus californiensis	124
28	Gonichthys tenuiculus	100
29	Chauliodus macouni	97
30	Stomias atriventer	91
31	Lestidiops ringens	89
32	Myctophidae	84
33	Diogenichthys spp.	76
33	Lampanyctus ritteri	76
35	Icichthys lockingtoni	75
35	Melamphaes spp.	75
37	Trachipteridae	70
38	Synodus spp.	69
39	Myctophum nitidulum	68
40	Argentina sialis	66
41	Symphurus spp.	65
42	Microstoma microstoma	60
43	Bathylagus milleri	58
44	Rosenblattichthys volucris	57
45	Macroramphosus gracilis	52
46	Peprilus simillimus	51
46	Parophrys vetulus	51
46	Clinidae	51

# TABLE 3A. (cont.)

Rank	Taxon	Count
49	Hygophum atratum	48
50	Gonostomatidae	45
51	Nansenia crassa	40
52	Paralepididae	39
52	Tetragonurus cuvieri	39
54	Xystreurys liolepis	37
55	Ceratoscopelus townsendi	36
56	Chiasmodontidae	32
56	Cottidae	32
58	Lampadena urophaos	30
59	Hypsoblennius spp.	29
59	Danaphos oculatus	29
61	Hypsopsetta guttulata	22
62	Hippoglossina stomata	21
63	Ophidion scrippsae	17
64	Agonidae	13
65	Scopelogadus bispinosus	12
65	Bathylagus pacificus	12
65	Blennioidei	12
65	Microstomus pacificus	12
65	Lampanyctus regalis	12
65	Atherinidae	12
71	Pleuronichthys decurrens	11
71	Cololabis saira	11
73	Zaniolepis spp.	9
74	Scorpaenichthys marmoratus	8
74	Sebastes jordani	8
76	Coryphaena hippurus	6
76	Syngnathus spp.	6
78	Anguilliformes	5
78	Pleuronichthys ritteri	5
80	Macropinna microstoma	3 3 3 3
80	Sebastolobus spp.	3
80	Bathylagus spp.	3
80	Lepidopus xantusi	
80	Cyclopteridae	3
80	Ceratioidei	3
80	Ichthyococcus spp.	3
80	Stomiiformes	3 3 3 3 2
80	Scopelosaurus spp.	3
89	Pleuronichthys spp.	
89	Pleuronichthys verticalis	2
	Total	62101

TABLE 3B. Pooled numbers of fish larvae taken during CalCOFI cruises in 1975. Counts are adjusted for percent of sample sorted and standard haul factor (see text).

Rank	Taxon	Count
1	Engraulis mordax	838883
2	Merluccius productus	84347
3	Sebastes spp.	45007
4	Citharichthys spp.	34806
5	Leuroglossus stilbius	28735
6	Triphoturus mexicanus	18081
7	Stenobrachius leucopsarus	14507
8	Sciaenidae	10537
9	Vinciguerria lucetia	8473
10	Bathylagus ochotensis	7171
11	Trachurus symmetricus	4875
12	Protomyctophum crockeri	3911
13	Tarletonbeania crenularis	3880
14	Citharichthys stigmaeus	3828
15	Bathylagus wesethi	3470
16	Diogenichthys laternatus	3082
17	Sebastes jordani	2907
18	Sternoptychidae	2627
19	Cyclothone spp.	2441
20	Sardinops sagax	2360
21	Lampanyctus ritteri	2174
22	Disintegrated fish larva	1998
23	Unidentified fish larva	1946
24	Diogenichthys atlanticus	1658
25	Sebastes paucispinis	1599
26	Lampanyctus spp.	1369
27	Gobiidae	1327
28	Paralichthys californicus	1151
29	Diaphus spp.	1132
30	Melamphaes spp.	1050
31	Symbolophorus californiensis	1048
32	Hypsoblennius spp.	1032
33	Pleuronichthys verticalis	961
34	Peprilus simillimus	898
35	Clinidae	872
36	Serranidae	827
37	Parophrys vetulus	798
38	Argentina sialis	714
39	Myctophidae	685
40	Chromis punctipinnis	683
41	Sarda chiliensis	670
42	Cottidae	620
43	Symphurus spp.	596
44	Ceratoscopelus townsendi	571
45	Stomias atriventer	556
46	Chauliodus macouni	553
47	Halichoeres spp.	443

# TABLE 3B. (cont.)

Rank	Taxon	Count
48	Bathylagus pacificus	439
49	Synodus spp.	428
50	Bathylagus spp.	409
51	Carangidae	400
52	Danaphos oculatus	364
53	Icichthys lockingtoni	358
54	Sebastes macdonaldi	332
55	Sebastes levis	328
56	Etrumeus acuminatus	270
57	Lampanyctus regalis	264
58		254
	Hippoglossina stomata Microstoma microstoma	247
59		240
60	Zaniolepis spp.	235
61	Lyopsetta exilis	229
62	Sebastolobus spp.	229
62	Lestidiops ringens	210
64	Pleuronichthys ritteri	
65	Nansenia candida	202
66	Ophidiiformes	193
67	Idiacanthus antrostomus	180
68	Oxyjulis californica	157
69	Chilara taylori	150
70	Bathylagus milleri	148
71	Ophidion scrippsae	147
72	Scorpaenichthys marmoratus	146
73	Scorpaena spp.	138
74	Nansenia crassa	137
75	Paralepididae	130
76	Sebastes aurora	109
77	Xystreurys liolepis	106
78	Prionotus spp.	103
79	Trachipteridae	100
80	Poromitra spp.	99
81	Anguilliformes	98
82	Tetragonurus cuvieri	97
83	Diogenichthys spp.	95
84	Hygophum atratum	94
84	Myctophum nitidulum	94
86	Gonichthys tenuiculus	90
87	Agonidae	86
88	Haemulidae	84
89	Notolychnus valdiviae	82
90	Scopelarchus spp.	81
91	Lepidopus xantusi	80
92	Rosenblattichthys volucris	78
93	Semicossyphus pulcher	77
94	Gonostomatidae	74
95	Atherinidae	73
95	Seriola lalandi	73

# TABLE 3B. (cont.)

Rank	Taxon	Count
97	Microstomus pacificus	71
98	Gobiesocidae	66
99	Cyclopteridae	63
100	Scomber japonicus	62
101	Hypsopsetta guttulata	61
101	Sphyraena argentea	61
103	Brosmophycis marginata	57
104	Benthosema pterota	54
105	Scopelosaurus spp.	53
106	Chiasmodontidae	51
107	Cololabis saira	49
108	Ceratioidei	48
109	Ichthyococcus spp.	46
109	Hygophum reinhardtii	46
111	Medialuna californiensis	45
111	Blennioidei	45
113	Caulolatilus princeps	43
114	Syngnathus spp.	41
115	Notoscopelus resplendens	40
116	Glyptocephalus zachirus	39
117	Oxylebius pictus	38
118	Macrouridae	37
119	Pleuronichthys decurrens	35
120	Hypsypops rubicundus	34
121	Gerreidae	31
122	Psettichthys melanostictus	29
123	Benthalbella dentata	28
124	Scombridae	26
125	Lepidopsetta bilineata	25
126	Lampadena urophaos	22
126	Coryphaena hippurus	22
128	Electrona rissoi	20
129	Brama spp.	18
130	Notolepis risso	17
130	Scopelogadus bispinosus	17
132	Valenciennellus stellatus	14
132	Scopelarchidae	14
134	Girella nigricans	13
135	Exocoetidae	12
135	Macropinna microstoma	12
137	Icosteus aenigmaticus	11
137	Stomiiformes	11
137	Polynemidae	11
137	Platichthys stellatus	11
141	Hexagrammidae	10
142	Loweina rara	9
143	Pleuronichthys coenosus	8
144	Scopelarchoides nicholsi	7
145	Aristostomias scintillans	6

TABLE 3B. (cont.)

Rank	Taxon	Count
146 147 147 147 150 150	Pleuronichthys spp. Ophiodon elongatus Diplophos taenia Photonectes spp. Anoplopoma fimbria Opisthonema spp. Howella brodiei	5 3 3 2 2 2
	Total	1162305

Numbers of fish larvae taken on stations occupied during CalCOFI cruises in 1975. Counts are adjusted for percent of sample sorted and standard haul factor (see text). Average number is given for stations occupied twice during a single month. Unoccupied stations are indicated by a dash. TABLE 4.

					Anguil	Anguilliformes				1 6		
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					Sardino	Sardinops sagax	XX					
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TABLE 4. (cont.)

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ulis	MAR.	1	-0	0.0	037.	208.	667.	839.	697.	165		877	0000	000	2770	956.	299.	45.	32.	0	14.	9	2.		710.1	000	050			1770	1007	13/	0000	0273.	4074	4 10	2 0	. / OT	200		0	- 0	3		1	489.	903.	435.	6560.4	073.	
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MOV.         DBC.         JAN.         FEB.         MAY         JUNE         JULY         SEP.         OCT.         NOV.           151.2         155.1         156.2         136.6         448.5         117.5         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         166.8         172.9	NOV.   DEC.   JAN.   FEB.   HAR.   MAY   JUNE   JULY   SEP.   OCT.   NOV.   DEC.   JAN.   FEB.   HAR.   MAY   JUNE   JULY   SEP.   OCT.   NOV.   DEC.   JAN.   FEB.   HAR.   HAR.   JULY   JU					Engi	Engraulis mordax	ordax	(cont.)			1		
151.2   156.1   166.8   193.	The control of the	1	NOV.		IA	FEB.		MAY	JUNE	JULY				EC
879.7         277.5         729.4         388.0         45.3         1112.8         224.6           277.4         379.4         4888.1         0.0         986.0         616.0         266.0           277.4         379.4         4888.1         0.0         0.0         12.1         428.6           6.0         683.4         1272.0         0.0         0.0         0.0         0.0           9.0         882.6         1272.0         0.0         0.0         0.0         0.0           9.0         882.6         177.0         0.0         0.0         0.0         0.0           9.0         20.2         17.1         17.1         30.0         0.0         0.0           9.0         20.0         0.0         0.0         0.0         0.0         0.0           9.1         22.2         10.0         0.0         0.0         0.0         0.0           10.0         22.2         10.0         0.0         0.0         0.0         0.0           10.1         22.2         10.0         0.0         0.0         0.0         0.0           10.2         22.2         22.2         22.2         22.2         0.0         0.	27.74         27.24.9         386.0         45.3         27.76         27.76           27.74         37.24.6         48.81.1         0.0         986.0         66.0         266.0           27.74         37.24.6         37.24.6         37.26.0         0.0         10.1         46.6         266.0           2.75.4         37.24.0         0.0         0.1         0.0         0.			51.	565.		3626.	08.	17.	F 1	1 1	66.	1 1	67.
879.2         109.4         7724.9         881.7         987.7         426.2           277.4         1751.6         3733.9         0.0         110.4         426.2           0.0         683.2         1274.5         0.0         0.0         0.0           0.0         8488.4         177.1         0.0         0.0         0.0           0.0         280.3         1.0         0.0         0.0         0.0           0.0         280.3         1.0         0.0         0.0         0.0           0.0         280.3         1.0         0.0         0.0         0.0         0.0           0.0         2.2.1         1.0         0.0 <td< td=""><td>879.2         109.4         7724.9         481.9         366.0         266.0           277.4         1751.6         3733.9         0.0         110.4         426.2         256.2           5.5         267.2         3733.9         0.0         110.4         426.2         256.2           0.0         383.2         1274.5         0.0</td><td>_</td><td>1</td><td>93.</td><td>275.</td><td>l</td><td>7209.</td><td>68.</td><td>45.</td><td>1</td><td>1 :</td><td>237.</td><td>1 1</td><td>14.</td></td<>	879.2         109.4         7724.9         481.9         366.0         266.0           277.4         1751.6         3733.9         0.0         110.4         426.2         256.2           5.5         267.2         3733.9         0.0         110.4         426.2         256.2           0.0         383.2         1274.5         0.0	_	1	93.	275.	l	7209.	68.	45.	1	1 :	237.	1 1	14.
27.7.4         1/51.6         3733.9         0.0         110.4         456.2         286.2           2.5         2777.2         1751.6         3733.9         0.0         12.1         30.0         0.0           0.0         8824.6         1577.1         10.0         0.0         0.0         0.0           0.0         660.8         79.1         0.0         0.0         0.0         0.0           0.0         22.1         177.1         0.0         0.0         0.0         0.0           0.0         23.2         10.7         0.0         <	25.5   667.2   1751.6	_	1 0	09.	724.	1	817.	α4.	2 0 7	1 (	1 1	616.	ı	99
6.5         -         25772         -         526.0         0.0         12.1         -         32.8         348.           0.0         -         1274.5         0.0 <td>6.5         5.5         5.7         5.5         5.5         5.7         5.5         5.6         5.5         5.6         5.5         5.5         5.5         5.5         5.5         6.6         5.5         5.5         6.0         0.0<td></td><td>. E.</td><td>i I</td><td>751.</td><td>1</td><td>733.</td><td>0 0</td><td>10.</td><td>ł</td><td>ŀ</td><td>26.</td><td>ı</td><td>86.</td></td>	6.5         5.5         5.7         5.5         5.5         5.7         5.5         5.6         5.5         5.6         5.5         5.5         5.5         5.5         5.5         6.6         5.5         5.5         6.0         0.0 <td></td> <td>. E.</td> <td>i I</td> <td>751.</td> <td>1</td> <td>733.</td> <td>0 0</td> <td>10.</td> <td>ł</td> <td>ŀ</td> <td>26.</td> <td>ı</td> <td>86.</td>		. E.	i I	751.	1	733.	0 0	10.	ł	ŀ	26.	ı	86.
6.0         683.2         1274.5         0.0         0.0         0.0           0.0         848.6         1377.1         0.0         0.0         0.0         0.0           0.0         280.8         1377.1         0.0         0.0         0.0         0.0           0.0         23.2         0.0         0.0         0.0         0.0         0.0           0.0         22.1         0.0         0.0         0.0         0.0         0.0           0.0         22.1         0.0         0.0         0.0         0.0         0.0           0.0         22.1         0.0         0.0         0.0         0.0         0.0           10.1         888.4         1.0         1.0         0.0         0.0         0.0           10.1         888.4         1.0         1.0         1.0         0.0         0.0           10.1         888.4         1.0         1.0         1.0         1.0         0.0           10.2         1.0         1.0         1.0         1.0         0.0         0.0           1.0         1.0         1.0         1.0         0.0         0.0         0.0           1.0         1.	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		. الر	1	677.	ŀ	220.		12.	ł	Į	2 .	ł	48.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		0 1	1	832.	1	274.		0	l	i		1	5
6486.4         1377.1         0.0         0.0           0.0         280.3         137.1         0.0         0.0           0.0         280.3         13.2         0.0         0.0         0.0           0.0         22.1         1.0         22.1         0.0         0.0         0.0           0.0         2.2         1.0         2.2         0.0         0.0         0.0         0.0           0.0         2.1         2.2         0.0         0.0         0.0         0.0         0.0           0.0         2.2         0.0         0.0         0.0         0.0         0.0         0.0         0.0           0.0         2.2         0.0 <td><math display="block">\begin{array}{cccccccccccccccccccccccccccccccccccc</math></td> <td></td> <td></td> <td>1</td> <td>824.</td> <td>ı</td> <td>510.</td> <td>7.</td> <td>0</td> <td>ı</td> <td>ı</td> <td>- 6</td> <td></td> <td>l</td>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$			1	824.	ı	510.	7.	0	ı	ı	- 6		l
0.0         280.8         79.8         0.0         0.0           0.0         280.3         3.2         0.0         0.0         0.0           0.0         280.3         3.2         0.0         0.0         0.0         0.0           0.0         222.1         222.1         0.0         0.0         0.0         0.0           0.0         222.1         0.0         0.0         0.0         0.0         0.0           10.1         8889.3         3.24.1         2266.8         8870.2         19.6         0.0           10.1         8889.3         3.759.9         182.0         220.9         0.0         0.0           10.1         8889.3         3.759.9         182.0         220.9         0.0         0.0           10.1         8889.3         1.059.4         81.0         81.0         92.0         0.0           10.2         7.021.6         4.372.2         10.67.3         124.9         0.0         0.0           10.2         7.280.8         17.63.2         10.67.3         124.9         0.0         0.0           10.0         1.044.3         1.044.3         1.044.9         0.0         0.0         0.0         0.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	_		1	485.	l	377.	0.	0	ı	ı	1		ı
0.0         280.3         3.2         0.0         0.0         0.0           0.0         23.1         -         0.0         0.0         0.0         0.0           0.0         23.1         -         0.0         0.0         0.0         0.0           0.0         364.0         802.9         1092.0         10.0         0.0         0.0           10.1         3847.4         2566.8         887.0         208.3         292.0         0.0           10.1         3847.4         2566.8         887.0         208.3         292.0         0.0           10.1         7021.0         4334.4         241.4         193.0         350.3         350.3           10.2         7021.0         4334.4         241.4         193.0         4850.3         350.3           13.3         280.0         372.2         1087.3         41.5         4850.3         350.3           13.3         280.0         3723.7         91.8         34.3         50.4         44.5           10.0         2821.3         3151.7         315.7         11.5         667.9         908.2         11.5         67.7           10.0         2821.3         315.7         10	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	_	0 (	1	660.	1	79.			ı	ı	ı		1
0.0         0.0 <td>0.0         0.0         0.0         0.0         0.0           0.0         364.0         0.0         0.0         0.0         0.0           5.1         0.0         364.0         0.0         0.0         0.0         0.0           5.1         0.0         364.0         0.0         0.0         0.0         0.0           10.1         8887.4         1.0         2.0         0.0         0.0         0.0           10.1         8889.3         1.0         0.0         0.0         0.0         0.0           10.1         1.0         1.0         0.0         0.0         0.0         0.0           10.1         1.0         1.0         0.0         0.0         0.0         0.0         0.0           10.4         1.0         1.0         0.0         0.0         0.0         0.0         0.0         0.0           10.0         1.0         1.0         0.0<td></td><td></td><td>1</td><td>80.</td><td>ŀ</td><td>3</td><td>- 0</td><td></td><td>1</td><td>I</td><td>ı</td><td></td><td>ı</td></td>	0.0         0.0         0.0         0.0         0.0           0.0         364.0         0.0         0.0         0.0         0.0           5.1         0.0         364.0         0.0         0.0         0.0         0.0           5.1         0.0         364.0         0.0         0.0         0.0         0.0           10.1         8887.4         1.0         2.0         0.0         0.0         0.0           10.1         8889.3         1.0         0.0         0.0         0.0         0.0           10.1         1.0         1.0         0.0         0.0         0.0         0.0           10.1         1.0         1.0         0.0         0.0         0.0         0.0         0.0           10.4         1.0         1.0         0.0         0.0         0.0         0.0         0.0         0.0           10.0         1.0         1.0         0.0 <td></td> <td></td> <td>1</td> <td>80.</td> <td>ŀ</td> <td>3</td> <td>- 0</td> <td></td> <td>1</td> <td>I</td> <td>ı</td> <td></td> <td>ı</td>			1	80.	ŀ	3	- 0		1	I	ı		ı
5.1         -         221           6.0         234.0         - <td< td=""><td>5.1         -         221         -</td></td<> <td>_</td> <td>0</td> <td>I</td> <td>, m</td> <td>l</td> <td></td> <td></td> <td>0</td> <td>ì</td> <td>í</td> <td>ì</td> <td></td> <td>ı</td>	5.1         -         221         -	_	0	I	, m	l			0	ì	í	ì		ı
5.1         0         354.0         0 </td <td>5.1         0.0         364.0         0.0<!--</td--><td></td><td></td><td>1</td><td>, ,</td><td>1</td><td>ı</td><td></td><td></td><td>ı</td><td>ł</td><td>ı</td><td>ŝ</td><td>1</td></td>	5.1         0.0         364.0         0.0 </td <td></td> <td></td> <td>1</td> <td>, ,</td> <td>1</td> <td>ı</td> <td></td> <td></td> <td>ı</td> <td>ł</td> <td>ı</td> <td>ŝ</td> <td>1</td>			1	, ,	1	ı			ı	ł	ı	ŝ	1
19.0   214.1   2666.8   887.0   208.3   292.0   207.2   201.5   3847.4   2191.5   20	19.6         214.1         802.9         1092.0         19.6         -         0.0         -         19.5         344.4         -         292.0         -         10.1         8889.4         -         292.0         -         292.0         -         10.1         8889.3         -         292.0         -         730.2         -         730.2         10.0         -         730.2         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.3         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -         730.2         -		0	ŀ	77	1	ı	ı	- 0	1	ı	1	ì	ţ
19.5   3847.4   2566.8   887.0   208.3   739.0   739.0   730.6   730	19.5   3847.4   2566.8   887.0   208.3   739.0   739		٠		, k	ı	0.0	092	6	1	Į,		ì	1
10.1   8889.3   3799.9   182.0   207.9   730.6   730	10.1   10.2		l		047	ı	566	887	0.80	ı	ı	92.	i	1
- 67.2       7416.6       4334.4       241.4       193.0       350.3         20.9       1 7021.0       4372.2       459.4       81.0       485.4         20.9       1 27.0       1 763.4       1551.4       124.5       985.4         20.9       1 27.0       1 763.4       1551.4       124.5       650.4         20.9       1 27.0       1 763.4       1551.4       124.5       650.4         22.6       6 386.5       917.3       43.2       650.4         23.6       1 299.6       1 87.2       1 91.8       661.9         0.0       1 10.9       1 10.5       0.0       1 10.3         0.0       1 10.6       0.0       0.0       0.0         0.0       1 10.4       1 10.6       0.0       0.0         0.0       1 245.0       0.0       0.0       0.0         0.0       2 245.4       2 46.5       0.0       0.0         0.0       1 246.7       0.0       0.0       0.0         0.0       2 25.4       0.0       0.0       0.0         0.0       2 25.3       2 26.7       0.0       0.0         0.0       2 25.3       2 25.4       0.0	19.4         67.2         7416.6         4334.4         241.4         193.0         356.3           19.4         0.0         7021.0         4372.2         459.4         81.0         985.4           20.9         127.0         1763.4         151.4         124.9         641.9         985.4           13.3         280.8         3065.2         917.3         43.2         641.9         641.9         641.9           22.6         390.0         372.7         91.8         34.3         230.0         641.9 <t< td=""><td>- ·</td><td>ı</td><td>, פית</td><td>047</td><td>1</td><td>. 000</td><td></td><td>0.20</td><td>ł</td><td>ţ</td><td>30.</td><td>1</td><td>1</td></t<>	- ·	ı	, פית	047	1	. 000		0.20	ł	ţ	30.	1	1
19:4         0.0         7418.0         4372.2         459.4         81.0         485.4           19:4         0.0         7021.0         4372.2         459.4         81.0         465.4           20:9         10:0         10:0         10:0         10:0         10:0         10:0           13:3         280.8         3065.2         917.3         43.2         2641.9         20:0           22:6         10:0         10:0         10:0         10:0         10:0         10:0           23:3         667.9         90:0         10:0         10:0         10:0         10:0           0:0         882.0         2961.0         11:0         67.9         10:0         10:0           0:0         882.0         2961.0         11:0         0.0         0.0         0.0           0:0         10:0         0.0         0.0         0.0         0.0         0.0           0:0         245.4         2462.7         787.9         0.0         0.0         0.0           0:0         2217.1         4680.0         285.2         44.5         0.0         0.0           0:0         221.7         40.0         0.0         0.0 <t< td=""><td>  19.4</td><td></td><td>ı</td><td>٠ د</td><td>000</td><td></td><td></td><td></td><td></td><td>ı</td><td>ı</td><td>50.</td><td>i</td><td>1</td></t<>	19.4		ı	٠ د	000					ı	ı	50.	i	1
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13.3       2.28(1)       3.753.7       91.3       43.2       641.9         22.6       390.0       3723.7       91.8       34.3       641.9         22.6       390.0       3723.7       91.8       34.3       641.9         22.6       10.0       11.5       11.5       67.7         0.0       10.0       11.5       11.5       67.7         0.0       1345.0       2561.0       11.6       0.0       122.7         0.0       10.0       11.6       0.0       0.0       0.0       0.0         0.0       2435.4       2456.0       0.0       0.0       0.0       0.0       0.0         0.0       256.4       26.4       26.4       26.4       26.4       26.0       0.0	13.3       2.26.7       3065.2       917.3       43.2       641.9         22.6       390.0       3723.7       91.8       34.3       641.9         22.6       163.8       167.9       10.0       193.8         23.3       1638.5       167.7       10.0       193.8         23.6       167.9       11.6       0.0       122.7         0.0       10090.1       2561.0       11.6       0.0       122.7         0.0       10090.1       6426.0       0.0       0.0       0.0       0.0         0.0       2435.4       26.7       0.0       0.0       0.0       0.0       0.0         0.0       226.4       2462.7       787.9       0.0       0.0       0.0       0.0         0.0       226.4       2462.7       787.9       0.0       0.0       0.0       0.0         0.0       226.4       2462.7       787.9       0.0       0.0       0.0       0.0         0.0       226.7       0.0       0.0       0.0       0.0       0.0       0.0         0.0       221.1       4468.0       285.2       675.8       0.0       0.0       0.0 <t< td=""><td>~ (</td><td>ۍ رو ه</td><td>ĺ</td><td>200</td><td>l 1</td><td>. 756</td><td>557</td><td>. Y C</td><td>1</td><td>1</td><td>00</td><td>ı</td><td>1</td></t<>	~ (	ۍ رو ه	ĺ	200	l 1	. 756	557	. Y C	1	1	00	ı	1
13.3       230.8       3723.7       347.2       347.2       230.2         23.6       638.5       1299.6       187.2       11.5       193.8       193.8         0.0       1943.2       667.9       908.2       11.5       122.7       193.8       192.7       193.8<	13.3       280.8       3723.7       34.3       230.2         23.6       1299.6       187.2       0.0       183.8       230.2         0.0       1298.6       187.2       0.0       193.8       193.8         0.0       2961.0       11.5       11.5       122.7         0.0       3151.7       11.6       0.0       122.7         0.0       2961.0       11.6       0.0       0.0         0.0       2961.0       11.6       0.0       0.0         0.0       2961.0       11.6       0.0       0.0         0.0       2942.0       3507.8       0.0       0.0       0.0         0.0       26.4       0.0       0.0       0.0       0.0         0.0       27.4       0.0       0.0       0.0       0.0         0.0       27.4       0.0       0.0       0.0       0.0         0.0       27.4       0.0       0.0       0.0       0.0         0.0       27.3       4680.0       285.2       675.8       11.6         0.0       2815.0       10.0       0.0       0.0       0.0         0.0       2815.0       10.0       <		÷	l	. / 7	ı	.007	. 100	. C Y	ı	ŀ	41.	1	ı
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TABLE 4. (cont.)

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MAY	1 + 1	ı	ı	1			ļ	l	1	1	ı	1		l	l	ı	1	1	1	1	1	1	ı	1			l	1	ı	1	ŀ	1		d Sidil	MAY		0				. 0	0	0	0		0.0		0
MAR.		4.	VV		000	000	./99	/64.	553.	27	37.	-		Í	ı	1	- mare	1	1	1	ţ	1	1	ł		I	l	1	I	ĺ	1	1	4	Argentina	MAR.			0	0	0	0				0	13.0		6
FEB.	1 1	28.			100	- 0	77° X	153.	026.6	0.0		33.3	) (	40.	3	2	- 0	7		- 4	-			. V L		0	.162	234.	878.	ش			•	A	FEB.		1	1	1	(	l	1	1	ı	1	1	I	I
JAN.		ı			ı	i	ı	ı	1	i	í	ı		1	ı	ļ	ı	1	1	1	- 1	1	1	I						ı	1	I			JAN.	1	0	0		. 0	- 0		0	0.0		0	1 9	0.0
DEC.		9	י טע	000	.710	300	698.	- 6	0		0	S A	9 6	331.	080	419.	00.	394.	83	0	·	0	0	0 0		0	422.	314.	. 0	. 0		0.0			DEC.	1	0.0	0	- 0	1	1	1	1	1			0.0	
		ı		}	ı	]	I	1	ı	ì	ļ		1							1	1	ı	ı				l		i	1	1	1			NOV.		ł	l		- 6				12.5			1	1
	1	9	כו	-	0	5	0	5	0					-	2	3	4	2			·			0 0		7	3	₩.	0.	5	0	50.0				0.	-	3	4	4.	- Q <sup>2</sup>	5	3	4.	-	36.0		0
STATION	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	00	. 000	30.	30.	30.	30.	30.	30	300	000	330	33.	33.	33.	33.	33	23	ה ה	י הר	, ,			000	31.	37.	37.	37.	37.	37.	37.	137.0			STATION	7.	0	0	0		]	per d	8	$\sim$	3	87.0	0 ,	-

0 00	00000	Z   • • • • •		FEB.	26.4 0.0 12.9 82.6		JUNE 0.0 0.0 0.0 0.0 0.0	JULY	SEP.	E	NOV	DEC.
	0 * 1   1   1   1   1   1   1   1   1   1	240.00 0.00 0.00 0.00 0.00 0.00		1	7mm014m0111904110	123.32		00000000				111111111111
		0.0 0.0 0.0 11.1 3.2 0.0		1 1 1 1 1 1 1 1 1 1	00000		2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1
	1111111111	000000000000000000000000000000000000000	2.9 8.7.0 0.0 0.0 0.1	11.8 0.0 0.0 0.0 0.0	233.5 12.8 0.0 0.0 0.0 0.0			0.0 11.6 0.0 0.0 0.0 0.0 0.0 11.6 11.6			1 3 1 1 1 1 1 1 1 1 1 1	

Microstoma microstoma

DEC.		DEC.	111111
NOV.	12.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	NOV.	0.000
OCT.	000000000000000000000000000000000000000	OCT.	
SEP.		SEP.	111111
JULY	000000000	JULY	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
JUNE	10.00 13.00 13.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00	JUNE	111111
MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	0.00
MAR.	11.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	MAR.	18.2 17.8 
FEB.	0.00	FEB.	111.3
JAN.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	JAN.	
DEC.	11.1 11.1 10.0 10.0 10.0 10.0 10.0 10.0	DEC.	0.00
NOV.	12000000000000000000000000000000000000	NOV.	
Z	70.00 70.00 80	ON	255.0 80.0 90.0 70.0 80.0
STATION	77.0 77.0 77.0 88.0 88.0 88.0 88.0 89.0 99.0 99.0 97.0 97.0 97.0 97.0 110.0 1110.0 1117.0	STATIO	60.0 63.0 63.0 67.0 77.0

TABLE 4. (cont.)

Nansenia candida (cont.)

83.0 80.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
10.0   0.0	.06 0.	t		0.0	ı	3.0	8.6	ı		1	i		1
99.0	.08 0.			0.0	1	6.3		I		1	0.0	ı	Į
90.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	.06 0.			0.0	1	7		i		ı	0.0	1	1
70.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	.06 0.				ı	5				ĺ	0.0	I	ı
90.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	.09 0.		ı	0.0	ı	0.0			ı	ı	1	0.0	l
90.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	.07 0.		ı		1	0.0			ŝ	ı	ı	0.0	ı
50.0 0.0 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	.06 0.		ł	0.0	1	3.1		- 9	ı	ļ		0.0	ŧ.
66.0 0.0 0 - 0.0 0 - 0.0 0 0.0 0.0 0.0 0.0	.0 50.		ı		1	0.0		9	ı	١		1	0.0
80.0 0.0 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	.09 0.		ŀ		ı	0.0			1	ì	i	0.0	ı
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	.08 0.		1		ı	3.2			1	ı	ı	0.0	ł
32.0	080	)	ı		ı	0.0			ı	ł		1	ţ
22.0	30.		ì	· –	1	0.0		-	ı	I		1	1
## Nov. Dec. Jan. Feb. Mar. May June 10.9		(		·	ı				ł	ı		ı	1
70.0	.000	1 1				o 0			ı	ı		ı	}
NOV.   DEC.   JAN.   FEB.   MAR.   MAY   JUNE   JULY   SEP.   OCT.   NOV.	.0 80.	ı		٠	1	0 4				1		ı	ı
NOV. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV.   NOV. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV.	.0 /0.	ł		0	I	3.4							ı
NOV. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV.   12.0	.0 60.	1 1		0 1	1 1	l I				1		: 1	1
NOV. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV.   132.0   1.0.9   1.0.				1									
32.0						Vanseni		5 <i>a</i>		 			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ATION	NOV.	DEC.	JAN.	FEB.		MAY	JUNE	JULY	SEP.	OCT.		DEC.
35.0 $-0.00$ $-12.1$ $-0.00$	.0 32.			0.	ı	ı	0.0	1	10.9	ı	0.0	ı	ı
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	.0 35.	i		2	ı	ı	0.0	ı		i	0.0	i	1
45.0	.0 50.	ı	0		ŀ	1 *	0.0			ĺ	0.0	1	1 (
45.0 - 12.3 0.0 0 - 13.2 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	.0 40.	ı	0		1	14.3	1			ł	0.0	1 1	1 1
46.0	.0 45.	I	٠ د	0	ŧ I	13.2	1 1			1 1	000	۱ ۱	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	.00	1 1	4 c	9	i (	13.2 -	1			í	0.0	1	ı
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 40.	ł			i	1	ı			ı	0.0	1	ì
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 80.	ı		0 1	ı	ı	ł			ı	0.0	ı	ı
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	.0 50.	ı			1		ı			ı	6.6	ı	ı
50.0 - 9.5 0.0 - 14.8 0.0 - 0.0	.0 70.	1			ı		1		0	1	0.0	1	ì
26.0 - 0.0 - 1.9 0.0 - 7.7 - 0.0 - 5.0 - 6.0 - 7.7 - 0.0 - 7.7 - 0.0 - 7.7 - 0.0 - 7.7 - 0.0 - 7.7 - 0.0 - 0.0 - 7.7 - 0.0 - 0.0 - 7.7 - 0.0 - 0.0 - 7.7 - 0.0 - 0.0 - 7.7 - 0.0 - 0.0 - 7.7 - 0.0 - 0	.0 50.	ı	- 0		ı		ı	ı		l	0.0	ı	ŀ
50.0 - 0.0 - 11.9 0.0 - 5.6 - 0.0 - 0.0 - 5.6 - 0.0 -	.0 26.	١					ı	1		ŀ	0.0	í	ı
60.0 - 0.0 - 2.8 0.0 5.6 - 0.0 3.5 - 0.0 0.0 - 0.0	.0 50.	1		i			ł	I		l	0.0	ī	1
35.0 - 3.0 - 0.0 0.0 0.0 - 0.0	.09 0.	1		1			1	ı		1	0.0	ł	i
50.0 - 2.8 - 0.0 2.8 - 0.0 60.0 - 0.0 0.0 - 0.0	.0 35.	ı	- 6	1			I	ı		ı	0.0	ı	ı
60.0 - 3.0 - 0.0 -	.0 50.	ı		l		1	ı	ł		ı	0.0	1	į
Bathylagus spp.         NOV.       DEC.       JAN.       FEB.       MAR.       MAY       JUNE       JULY       SEP.       OCT.       NOV.         65.0       -       -       -       0.0       -       -       0.0	.09 0.	1		ı		i	ı	ı		1	0.0	ŀ	ı
NOV. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV.						Bathyl	agus sp	p.					
0.065.0 - 0.0 - 10.2 - 0.0 - 0.0	TION			iz	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
N	0 65		1			10 2						0.0	 
	.00 0.					7.01			•				

TABLE 4. (cont.)

Bathylagus spp. (cont.)

STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
02 0 0				l	11.3	;   l.	, 1	0.0	1	ı	0.0	ŧ
3 0 80	ı	0	1	1	6.1	ı	1		1	1		1
0.0	1		ŀ			0.0	1	0.0	1	F	0.0	ł
0.0	la .	0	ŀ	5.2	1		I		1	l		1
O O BO	١	- 0	1		ı		ı		1	1	- 0	į
77.0 48.0	ı	0.0	!		0.6	0.0	ì	0.0	1	1	0.0	i
7.0 90	ı		1	1		0	ŀ		ı	1		ı
0.0 0.0		0.0	- 0	i.			ì		1	1 -		1 (
3.0 41	0			1.	- 0	- 6	i		ı	0.0	i	2.9
3.0 43	0	1		ı	0		ı		1	0.0	1	0.0
5 0 38	0	Į	- 0	l			i		1	0.0	ı	ł
7.0 45	0.0	ı		1	0.0	- 0	1		1	0.0	www	52.0
7 0 50		1		ł		0	t		1	0.0	***************************************	11.0
7.0 60	0	1		ı			ı		ı	0.0		6.4
7.0 70	0	į	- 4	ı		0	ı		ŧ	0.0	1	1
7.0 90	0	l	- 0	1			1		l	0.0	í	
0.0	9 {	0.0		1			0		I	0.0	1	26.6
0.0				t		- 0		ı	1	1	0.0	1
1 5 28				1				ı	ŀ	0.0	1	
1 5 29				ŧ	- 0			1	i	0.0	I	
1 5 30			- 0	ě	0	- 0		1	1	0.0	1	
3.0 30		0.0		l.		0	0.0	1	ı	0.0	1	12.0
3.0 40	0		0	ı	- 6			ì	ı	0.0	1	
3.0 45	0	ł	0	1	0			ı	ı	0.0	1	
3.0 100	2.9	ŧ		1	ı	1	ļ	ł	į	f	1	ţ
4.0 32	0	l			l	1		I	l	! (	l	ı
7.0 31	0		- 9	ŀ	0.0		- 0	1	ı	0.0	ı	ı
00.00	1	0	- 6	í	0			į	1	0.0	1	I
00.00	ļ		- 0	ı	7.4	0.0		1	ı	0.0	I	1
0.0 80	l	0.0	0.0	ı			0.0	I,	ì	0.0	ı	I
00.00	1			1			0.0	ı	ı	7.7	ı	1
03.0 30	1	0		ı	0.0		10.0	Į	ı	0.0	ĺ	1
03.0 31	1		- 6	ı			11.4	I	1	0.0	į.	f
03.0 80	ı			i	1	0	0.0		ł	7.6	ı	1
07.0 50	ı	0.0	2.9	1	1	11.6	1	0.0	l	0.0	í	1
07.0 60	1	- 0		J			1		I	0.0	i	ı
10.0 35	ı			į	0.0	1	0.0	0	ı	0.0	1	i
10.0 45	l		- 6	ı	0	i	0.0		ı	0.0	j	1
17.0 70	1		- 8		ı	l	0.0		1	0.0	ı	ì
27.0 35		0.0	1	2.7	ŀ	1	I		1	0.0	į	I
				Be	thylag	Bathylagus miller	eri					
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
										1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1
60.0 52.0	,	0.0	ı	2.5	1	1	į	0.0	1	-	0.0	1

TABLE 4. (cont.)

	DEC.	11.6	DEC.	
	NOV.	000000000000000000000000000000000000000	NOV.	100000000000000000000000000000000000000
	ocr.	0.00	OCT.	
	SEP.	111111111	SEP.	
	JULY	000   000000000000000000000000000000000	JULY	0.0000000000000000000000000000000000000
(cont.	JUNE		JUNE	
lleri	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	11.6
Bathylagus milleri	MAR.	2	MAR.	146.6 1.0 10.1 10.1 18.2 18.2
Bathyl	FEB.	6.2 1.3 22.2 0.0 5.7 7.0 0.0 0.0	FEB.	17.8 67.9 11.6 11.6 16.2 16.5 17.0 17.0 17.0 17.0 17.0 17.0 17.0 17.0
	JAN.	00.00	JAN.	
	DEC.	11.3 0.0 0.0 0.0 0.0 11.9 11.9 11.8	DEC.	14.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	NOV.	0.00	NOV.	
	NO.	60.0 49.0 60.0 70.0 53.0 65.0 70.0 70.0 70.0 70.0 45.0	NO	52.0 660.0 65.0 72.0 65.0 72.0 72.0 72.0 72.0 72.0 72.0 72.0 72
	STATION	66.0 66.0 67.0 70.0 73.0 73.0 73.0 73.0 883.0 90.0	STATIC	60.00 60.00

TABLE 4. (cont.)

	DEC.	DBC	
	NOV.		
	OCT.	0.0000000000000000000000000000000000000	00 000000000
	SEP.		
t.)	JULY	10.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
(cont.	JUNE	JONE	
Bathylagus ochotensis	MAY	AAY 10.00 10	
gus och	MAR.		
Bathyla	FEB.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	JAN.		
	DEC.	533.4 50.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	0.0000
	NOV.		
	NO.	000 000 000 000 000 000 000 000	00000000004000
	STATION	STATIO 70.00 73.00 73.00 73.00 73.00 77.00 77.00 77.00 77.00 77.00 77.00 880.00 880.00 880.00 881.00 883.00 883.00 883.00 883.00	

(cont.)

Bathylaqus ochotensis

991.0 000000 NOV OCI SEP JULY JUNE 000000000000000 MAY 12.7 25.8 26.0 60.0 FEB. DEC STATION 

	DEC.	1			ŧ	ł	ı	1	i	1	1	1	1	ł	§	I	ı	1	1	1	I	1 1	ł	1	1	1		1	1	ı	ł	1	i		DEC.	ł	1	Į	ı	I
	NOV.	1	ł	I 1	ı	- 1	1	1	ı	ì	1	í	1	ı	1 1	1 1	- 1	1	1	ı	ı	1 1	ı	ı	1	1	ı	1	1	ì	1	1	ı		NOV.			0.0		
	OCT.					0 0								0	0	0	0					0	0			0.0			9 1						OCT.		1	1	i	ı
	SEP.	1	1	1		ı	1	ı	1	1	ı	1	I	1	ı	I	۱ ،	1	1	1	1	l	1 1	l	1	1	į	1 1	1	1	1	I	ı		SEP.			ł	1	ı
_	JULY		ł	1	i I	1	ı	1	1	1	1	Į	1	i	1	1	1 1	l 1	1	1	1	ł	l I	1 1	1					0.0					JULY	1		0.0		0.0
(cont.	JUNE	0					8				5.0				0			0	0 1	0 0	10.2				0	•	1			12.7				sns	JUNE	1	1 1	1 1	1	ı
ensis	MAY	1 .			0				9	· ~	6 (						D.		0	b 4		0	- G	0	0 (	12.3		ī	1 1	1	1	1	ı	pacificus	MAY		l f	1 1	ı	}
s ochot	MAR.					ر د د	0	2 0	·	û	200	0		- 6	0.			0		6 1	12.8	0		0		0	l		7) 4	0.0		- 6	1	Bathylagus	MAR.		10.2	1 1	ì	i
Bathylagus ochotensis	FEB.	1	1	1	1	1					ł I	1	1	1	1	1	1	1		1 1	1	ţ	1	1 1	1	1	1	ı	1	1 1	1	ţ	I	Bath	FEB.	1	0		38.9	9
Bat	AN.	5.	9.	3	5			5 0	7 [	- 0	א ת	0	) <u>-</u>	2	0	2.	- 			0.0	0.0	- 8	H	0.0	-i c	000					0 (	0.0	0.0		JAN.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ì	1 1	1	t
	DEC. J		1	- 1	1	1	1		c			1 1			0.		0.			0	0 0	0.	0.	0.0	٥. د	0.0	0		- 9	0	9				DEC.			0.0	0 4	•
	NOV. D	1									0.0		0	1	ŀ	ı	ŀ	1	ı	ı	1	1	1	1	ı	1 1	1	1	1	1		1	!		NOV.	,	1	1 1	1 1	ı
	Z	0		0	0	0.	0	0	0	0,	0.	0.0	0.0			0	0	0 -	0.	0.	0.0	0	0.		- 6	0.0	0 (	- 0	- 0	- 0	0	0 1			2	2	0		8	0 6
	STATION	100	7.0 31	7.0 32	7.0 35	7.0 40	7.0 45	7.0 50	7.0 55	7.0 60	7.0 70	7.0 80	06 0.76	20.00	32	0.00	00.0 40	00.00	09 0.00	00.0 70	000.00	03.0 40	03.0 45	03.0 50	03.0 60	0/ 0	07.0 34	07.0 60	10.0 34	10.0 35	12.0.25	13.0 45	17.0 30		STATION	- i	0.0	3.0 5	3.0	67.0 55

TABLE 4. (cont.)

1	DEC.			ı	ı	i	ŧ	ı	i	ĺ	) i	į	ı	į	ŧ	i	ı	ı	ł	ı	ı	ł	ì	12.9	ì	į	ì	ı	ı	ı	ı	ı	ı	1	1 1	i			DEC.		1 1	1	1	t	1 0	
 	NOV.		0	0.0	0.0	1	ı	- 4		0	8			0.0			0		. 0					i	1	ı			0.0		ı	1	I	1	1	1			NOV.	1	0°0		2.5	ı	1	
             	OCT.		ı	1	ł	ı	ł	ı	ı		I	ı	1	1	ł	4	ı	ı	ŀ	ı	1	i	ŀ		0.0		ı	ļ	ŀ	ı						00.0			OCT.		1 1	1	1		5.7	0
	SEP.		ı	ı	i	ı	ι	ı	ŀ		í	ı	i	1	í	ı	ı	ı	ì	!	ı	ı	ı	ł	i	ı	ı	ı	ì	ı	ı	t	ı	ı	ŀ	1		1 1 1 1	SEP.		1 1	l 1	ı	1	ı	ı
·	JULY		0.0	ł	i	1	ı	0.0			8	٠				0									0.0			1	ı	í	1	ı	1 4	0.0		0.0			JULY	1					5.9	
(cont.	JUNE	 	ı	i	ı	i	ı	1	ı	l	ţ	1	ı	ı	i	ł	1	1	1	ı	1	1	ı	1	ı	ı	0.0	0.0			0.0					12.4	1	hi	JUNE		i	1 1	ı	1	ı	ı
ificus	MAY		ı	1	1	1	ı	0		0.0	17.5	1 -								9						. 4	0.0							à		l I		is weset	MAY	1					14.8	
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

NOV.   DEC. JAN.   FEB.   MAR.   MAY   JUNE   JULY   SEP.   OC   Stomies atlivement   Stomies atlivement   Oc   Oc   Oc   Oc   Oc   Oc   Oc   O	NOV.   DEC.   JAN.   FEB.   MAR   MAY   JUNE   JULY   SEP.						rnoronecres		SPP.					1 1
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

	DEC.	į	1	1	ı	ı	ı	ł	ı	1	1	į.	1		1	ı	ı	1	ı	ı	1	1	į	1	ı		DEC.	0.
	NOV.	1	ı	ı	1	ı	ı	ı	1	l	8 2	ı	1	l i	1 1	ı	ı	1	ı	ŀ	ì	1	ı	ŀ	ı		NOV.	2.8 0.0 18.8 0.0 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1
	OCT.												0			0	0					0.0			0		OCT.	0.0 0.0 12.1 2.8 
	SEP.	1	1	ĺ	ł	1	ı	ı	ı	í	ı	ı	ı	i	ı	) {	ì	ı	ı	ı	1	ł	1	1	ı		SEP.	
	JULY						0			- 0					0						, ~	2.4		0			JULY	000000 0001111111111111111111111111111
t.)	JUNE	1	0 (		0.0						0			0	0	0	9	l I	1	- 1	ı	l I	1	ł	t	townsendi	JUNE	10.00 10.00 10.00 10.00 10.00 10.00
ae (con	MAY		í	ı	1	1	ı	ı	1	1	1	ı	I	1	ı	ı	ı	1		1 1	ı	ı jı	ı	1	1		MAY	000000000000000000000000000000000000000
Myctophidae (cont.	MAR.	1		- 4		1			0.0		ĺ	ı			0.0	0	1 0				0		1	i	ı	Ceratoscopelus	MAR.	000000000000000000000000000000000000000
Myc	FEB.		1	ł	1	1	ı	ţ	ı	ı	1	ſ	ł	ı	ţ	ı	4		0		9	200		0 8		Cerate	FEB.	
	JAN.	1	; -i <	0 1	3.0				- 6		- 6	- 0		0				ı	ı	l	ı	] [	1	1	1		JAN.	000000000000000000000000000000000000000
	DEC.	1		0		ı		0		1	1	ı			0.0	ŀ		0				000	0	0 0			DEC.	0.00
	NOV.		1	1	1	ı	ł	1	ł	1	1	1	ı	1	1	ı	ı	ı	ı	ı	1	1 :	1 1	1	1		NCV.	
			٠ د د	D L				0	0		0	0	0	3	5.	0	0	2.	5	5	0	S			60.0			990 990 990 990 990 990 990 990 990 990
	STATION		10.0	0.01	0.01	0.01	13.0	13.0	13.0	13.0	13.0	17.0	17.0	19.0	20.0	20.0	20.0	23.0	27.0	30.0	30.0	33.0	33.0	27.0	137.0		STATION	80.0 83.0 83.0 83.0 87.0 90.0 93.0 93.0 93.0

TABLE 4. (cont.)

	DEC.	1 1	i	ı	i	ı	ŧ I	1 - }	ł	ì	1 1	1	ì	ı	1 1	- 1	ı	ı	ı	ll	1	ı	1	ı	1 1	ł	ı		DEC.	111111111
	NOV.	1 1	ı	ı	ı	I	i		ŀ	ŧ	1 1	1	1	ı	l I	1	ı	I	1	1	ı	ı	ı	ı	l i	ı	ı		NOV.	00010000
	OCT.	15.9						0				9 0		9	0	0	0 9									0.0			OCT.	11111111
	SEP.		1	ı	ı	ı	I	1 1	ł	ı	1 1	1 1	ı	ŀ	1	1 1	1	ı	ŧ	1 1	ı	ı	ı	l	1 1	1	i		SEP.	11111111
ıt.)	JULY		ı	ł	ı	l	à	0		0.0	1 1	1	}	0.0						9	0 4				0	20.4	0.		JULY	34.2 538.6 112.6 110.2 316.7 10.6
i (cont.	JUNE	20.2	0 0			ů,		, ,	t	1	0.0	4.0	0.0	0.0	0.0	7.0	0.0	0.0	2	24.9	3.1		ł	ı		1 1	ł		JUNE	1 1 1 1 1 1 1 1 1
ownsend	MAY	0.0			0.0		0.0		0 0	0.0	- 3		ı	1	i	1 1	l k	!	i	1 1	Į	ı	ì	ŀ	l	l i	ŧ	s spp.	MAY	
selus t	MAR.	0.0	71.4	1 [	0.0		1		1	1	ı	l I		0.0	0.0	1 1	1	ı		000					0.0	0.1	ı	Diaphus spp	MAR.	0000
Ceratoscopelus townsendi	FEB.		1 1	1	ı	ı	ı	1 (	1	ı	ı	1 1	1	t	ı	1 1	1 1	ı	ı	1 (	1		0.0	1 4					FEB.	0 00000
Cer	JAN.					0.0				0.0				0			00.0							0.0	ı	1 1	ì		JAN.	11111111
	DEC.					8.6					ı	1 1		12.0		1 -	0-0			0.0	1 1					0.0			DEC.	000 000
	NOV.	1	)	1	ı	ı	ı	1	1 1	ł	1	1 (	. 1	ı	ı	ı	1 1	ı	ı	ŀ	1 1	ı	Ę	ı	ı	1 1	ı		NOV.	1 1 1 1 1 1 1
		10			0	0.	0		4 €		0.	00	200	5	0.	0.0		0	0.	0		. 6	2	0.	0	35.0	0			60.0 65.0 70.0 80.0 70.0 70.0
	STATION	0.00	0.00	0.00	03.0	03.0	03.0	03.0	0.70	07.0	07.0	07.0	10.0	10.0	10.0	10°C	13.0	17.0	17.0	20.0	0.02	23.0	23.0	23.0	30.0	130.0	37.0		STATION	60.00 60.00 67.00 770.00 770.00

 	DEC.	0 0.00000000000000000000000000000000000
	NOV.	000000000000000000000000000000000000000
	OCT.	000000000000000000000000000000000000000
	SEP.	
	JULY	1000 1170 1170 1170 1170 1170 1170 1170
ont.)	JUNE	18.5.7 10.00 22.5.5 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00
Diaphus spp. (cont.	MAY	327.000000000000000000000000000000000000
aphus s	MAR.	
Di	FEB.	
	JAN.	
	DEC.	
	NOV.	
	2	753 753 753 753 753 753 753 753
	STATION	73.0 73.0 73.0 77.0 77.0 77.0 88.0 88.0 88.3 88.5 88.5 99.0 99.0 99.0 99.0 99.0 99.0 99.0 99

TABLE 4. (cont.)

1	DEC.	1 1 1 1 1 1		DEC.	1 1 1	1 1	1	l	1-1	1 1	00.0	1 1	0.0	1 1	3.5	0.0	0.0	1	1.1	0 0	000
	NOV.	111111		NOV.					00.0	0.0	1 1	1 1	i l	1 1	1 1	i 1		200	0.0	1 1	1 1
	OCT.	0.0 0.0 0.0 0.0 11.2 0.0		OCT.	1 1 1	1 1	ı	1 1	1 1	1 1	0.0		0 0					1	1 1		000
	SEP.	1 1 1 1 1 1 1		SEP.	1 1 1	1 1	ı	1 1	l i	1 1	1 1	1 1	1 1	1 1	ii	i 1	1 1	ı	I I I	1 1	1 1
	JULY	20000		JULY	35.2 0.0 10.2	1 1	0.0				11.8				1 1	1 1	1 (	ı	l I .	1   1	1-1
SOE	JUNE	23.9	p.	JUNE	1 1 1	1 1	ı	1 1	1 1	1 1	1 1	1 1	1 1	1 1		8 1			2.9		000
urophaos	MAY	0	ctus spp.	MAY	1 1 1	1 1	12.9	3.1	12.2	000	0.0 00		8 9								000
Lampadena	MAR.	000001	Lampanyctus	MAR.	0.0	1 1				0 0	0.0					0.0			0.0		26.4
La	FEB.	0000		FEB.		4.7		0.0		1 1	1 1	1 1	1 1	1 1	1 1	1 1	Į į	1	i i	1 1 1	1 1
	JAN.	0000		JAN.	1 1 1	1 1	1	£ 2	1 1	0.0	0.0	0.0	0.0	0.0	0.0				000	0.0	000
	DEC.	11.4 11.4 0.0 0.0 0.0		DEC.	0.0					0.0		0.0		l f		0.0		1 1	1 1		12.6
	NOV.	111111		NOV.	1 1 1	1	1	1 1	1 (	1 1	0.0			10.5	,	I I			90: 90;	11.5	1 1 1
	Z	60.0 70.0 339.0 60.0 40.0		z	70.0		0:	0.	0.0	0	0.1	00	50	0	800	, , ,		. 0	900.	- <b>.</b> .	. 0 8
	STATION	107.0 110.0 120.0 123.0 130.0	1	STATION	60.0	7:	3.	3.	7.	0	m m	, m	7	2	0					0	3::

TABLE 4. (cont.)

MOV. DEC. JAN. FEB. MAR. JUNE JUNE JUNY SEP. OCT.  10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0 DEC.         JAN.         FEB.         MAR.         MAY         JUNE         JULY         SEP.         OCT.         NOV           0 0.0         <					Lamp	Lampanyctus spp		(cont.)					
10.00	10.0			DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
10.0	10.0	1 60		0	0.0	4			0.0	1 1	1 1	0 0	1 1	0 0
2.8	11.6			0	0.0	1		S	11.6	ı	ı		1	
2.2   0.00   0.0	2.0	0	-:	ı	0.0	deper	- 0	-	0.0	4 (	1 1		l 1	
2.6	2.8	,	0	1 1		1 1	0 1			- 1	ŧ	0		0
2.8	2.8		0 0	ı	0.0	1			3.0	ì	ı	1		ı
10.0	10.4   10.4   10.4   10.6		0 0	ŧ	0.0	1			9.8	1	1	ł		1
9.00 9.00 9.00 9.00 9.00 9.00 9.00 9.00	9.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2		ı	0	1			0.0	i	ı		1	ı
10.0	1.0	6		ł	2.	1		0.0	0.0	ł	1	0.	1	1
2.0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0	2.0 0.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			1	3	1		0.0	0.0	ı	ļ	-	e e e e e e e e e e e e e e e e e e e	I
9.00 9.00 9.00 9.00 9.00 9.00 9.00 9.00	5.0         0.0         3.3         3.9         0.0 <td>2</td> <td></td> <td>1</td> <td>0.</td> <td>1</td> <td></td> <td>0.0</td> <td>11.0</td> <td>ł</td> <td>1</td> <td>1.</td> <td>1</td> <td>1</td>	2		1	0.	1		0.0	11.0	ł	1	1.	1	1
9.0	0.0         3.1         0.0 <td>5</td> <td></td> <td>ì</td> <td></td> <td>1</td> <td></td> <td>0.0</td> <td>0.0</td> <td>i</td> <td>1</td> <td>- 0</td> <td>ì</td> <td>1</td>	5		ì		1		0.0	0.0	i	1	- 0	ì	1
44.8         9.0 <td>5.0         0.0<td>0</td><td></td><td>1</td><td></td><td>l</td><td></td><td>3.1</td><td>0.0</td><td>i</td><td>١</td><td>- 0</td><td>I</td><td>i</td></td>	5.0         0.0 <td>0</td> <td></td> <td>1</td> <td></td> <td>l</td> <td></td> <td>3.1</td> <td>0.0</td> <td>i</td> <td>١</td> <td>- 0</td> <td>I</td> <td>i</td>	0		1		l		3.1	0.0	i	١	- 0	I	i
44.8	47.8         -         13.4         -         19.0         0.0	· ·		1	7	1		0.0	0.0	ı	1		ı	1
44.8	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		0 1	1	3	1		0.0	0.0	ł	I		-	ı
10.0   0.0	6.7         -         0.0         0.0         3.8         -         0.0		4	1	0	1		0.0	0.0	ı	ł		1	I
8.6	8.6         -         0.0         -         0.0         0.0         -         0.0		ی .	1		1	- 1	0.0	3°8	1	1		ı	1
6.6 45.1 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	8.6 45.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		0	1		1		3.4	2.9	1	1		í	1
45.1  2.9  0.0  0.0  0.0  0.0  0.0  0.0  0.0	45.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		0	1	0 (	1		6.1	11.1	I	ı	0	1	1
2.9 0.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.0			4		ı	- 6	0.0	0.0	í	ì	- 0	1	1
2.9 0.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	· C	ı	7 1	0	1		0	1	1	ł		1	1
10.0	10.0					1		0.0		ı	1		1	ı
12.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2 4	1			1		9.0	. 0	i	ı	0	ι	ŧ
12.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0	12.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		1			1	0 (	0.0	0	1	1	1	ì	1
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0         0.0 <td></td> <td>ı</td> <td></td> <td></td> <td>1</td> <td>9 1</td> <td>0.0</td> <td></td> <td>1</td> <td>i</td> <td>-</td> <td>1</td> <td>1</td>		ı			1	9 1	0.0		1	i	-	1	1
0.0       0.0       3.0       0.0       3.1       0.0       0	0.0         0.0 <td></td> <td>I</td> <td></td> <td></td> <td>ı</td> <td></td> <td>0.0</td> <td>2</td> <td>1</td> <td>1</td> <td></td> <td>F</td> <td>ı</td>		I			ı		0.0	2	1	1		F	ı
5.5       0.0       0	0.0         -         0.0         -         0.0         -         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         0.0         -         0.0         <		. 1	p	000	1	0 1	000		+	ı	9	1	1
5.5       0.0       0	0.0       0		- 1			4		1		ı	1		1	1
5.5       0.0       0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		ı	9	) ) )	1	)	1		1	1		ĺ	ı
8.6       3.2       -       0.0       0.0       -       0.0       0.0       -       1.9	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		1		0	1				î	1		ı	1
8.6       3.2       -       0.0       0.0       0.0       -       2.6       -       -       2.6       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       2.7       -       -       -       0.0       -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		1			1	2			1	1		ı	i
6.1 0.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		1			1	0			ı	1		ı	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		I			1	,			1	1		ı	ı
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		1	9	2	1	1	- 0	1		1	0	ŧ	ı
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	V	l	2	2	1	+		1		1		1	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1 15	1	0	0	1	1		I		1	0.	i	l
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		1	2		1	1		1		1	0	ì	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		1	2		l	1		1		ı	6	1	1
2.0 11.5 5.7 - 0.0 1.3 2.0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		ţ	000		ł	1		1		ı		1	I
22.0 - 1.3 - 2	2.0 1.3 2. 4.0 - 0.0 - 0.0 - 0.0 - 2.		ı	0 1		ı	ı				1		1	1
2.	4.0 - 0.0 0.0 - 0.0 - 0.0 - 2.		1	1		ı	1	•		- 1	1		ı	1
		, ×	1		0	1		1	0.0		1		1	1

TABLE 4. (cont.)

	V. DEC.		DEC.	5.
	OCT. NOV		OCT. NOV	- 10
	SEP. 0		SEP. 0	1
	JULY	23.88	JULY	0.0
(cont.)	JUNE	12.2 12.2 12.8 12.8 12.2 12.2 12.2 12.2	JUNE	1
s spp.	MAY	tus regal	MAY	i
Lampanyctus	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	å
Lamp	FEB.		FEB.	0.0
	JAN.	111.3 10.0 10.0 10.0 10.0 10.0 10.0 10.0	JAN.	ı
	DEC.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	DEC.	0.0
	NOV.		NOV.	
	STATION	110.0 11	STATION	67.0 50.0

TABLE 4. (cont.)

	DEC.	0.00	DEC.	
	NOV.	00 00 00 00 00 00 00 00 00 00 00 00 00	NOV.	000000000000000000000000000000000000000
	OCT.		OCT.	
	SEP		SEP.	
	JULY	10.2 12.5.0 10.0 12.3.3 10.0 10.0 10.0 10.0 10.0 10.0 10.0	JULY	111.7 13.6 13.6 11.2 10.5 11.3 12.2 0.0 0.0
(cont.)	JUNE	10.3 10.3 10.3 12.6 teri	JUNE	
egalis	MAY	10000000000000000000000000000000000000	MAY	0.0 0.0 3.0 0.0 25.0 12.1 0.0
Lampanyctus regalis	MAR.	111.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	MAR.	20.00
Lampani	FEB.		FEB.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 11.4
	JAN.		JAN.	0.0
	DEC.	0 0000000000000000000000000000000000000	DEC.	0.0000000000000000000000000000000000000
	NOV.		NOV.	
		55 70 70 70 70 70 70 70 70 70 70	72	55.0 55.0 55.0 55.0 51.0 65.0 70.0 80.0 80.0 65.0 65.0
	STATION	67.0 883.0 883.0 883.0 883.0 887.0 93.0 93.0 93.0 93.0 93.0 93.0 93.0 93	STATION	60.0 67.0 67.0 70.0 70.0 73.0 73.0 77.0 80.0

				I	Lampanyctus	ctus ri	ritteri	(cont.)					
STATION		NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
10	1		1	-		1 4	1 .			1	ł		ı
80.0	0.07	1		12.5	i	0.0	0.0	ı	0.0	ı	ı	0.0	ı
	: -	ı		0	ı			ı		ı			1 9
		14.6		0.0	l			ļ		ł	0.0	1 (	•
m	0	0.0			1			I		1	0	1	1
m	0		0.0	9.9	ı		0	ı	7	age		ı i	ı
7	0		1	0	1			i	٠	ı			1
7	0	0.0		9	ı				÷	l	•	. 1	
	_		0.0		ı	- 0			ı	ı			
	 M		ı	3,	ı	. 0			ı	I	I		
	0		ı		ì				ı	ı	l		
	0		ı	9.	1		8		Į	ı	١		- 1
0	0	0.0	1	14.4	1	0		0.0	l	1	<b>i</b> 1		1
0	0		ŧ	5.	ı				i	١	] -	0	ı
0	0			4.	ı				í	ŀ		1 1	
, ,	6			2.	ı				ì	l	0.0	1	
~	0	1			ı				i	l			
, ~					1	0	0		ŀ	l		ı	0
, ~		- 1	1		ı		- 6		I	I	•		0
, ~			ļ		ı	0			I	I	I	0	
, ~		2.8	ı	0.0	ı	29.1	0.0	5.7	l	I	I	0.0	1
, ~			ı		1	1			1	i	j	0	1 1
, ~	. c		ì		ı				i	ι		ŧ	<b>i</b> 1
ى د					ı				ŧ	i		I	1
٠.	2	1	0.0		1				ì	ı		l	)
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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D.	FEB.		FEB.	0.0012.5
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	DEC.	12.2 0.0 18.2 2.8 2.8 0.0 0.0 14.9	DEC.	21.9 0.0 0.0 0.0 0.0 0.0 1.1 1.1 1.2 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3
	NOV.	0.0111111111111111111111111111111111111	NOV.	21.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0
		35.0 90.0 70.0 70.0 70.0 70.0 70.0 80.0 80.0 80.0 80.0 80.0 80.0 80.0		90.0 90.0 65.0 70.0 80.0 90.0 90.0 90.0 80.0 80.0
	STATION	97.0 97.0 100.0 100.0 100.0 110.0 1113.0 1113.0 1113.0 1117.0 1120.0 120.0	STATION	77.0 77.0 77.0 77.0 77.0 77.0 77.0 80.0 80

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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TABLE 4. (cont.)

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	JAN.		1	k	1 1	1 1	ı	1	j	1	ı	I	ŧ	1 1	- 1	1	1	1	ı	ı	i	1 1	1	ı	1	ı	ı				0.		'n,	x	٠,			2	0	0	12.3	ø 14
	DEC.		0.0		1		34.9	o M [		32.8	0		F		7.11	. 0			0.		0	24.1	+ 1	Ι.		0.0			0 4						ŧ	l 1	ı	ł	1	I	1 1	
	NOV.		ı	ı	ı	1	i I	i	1	ı	ţ	ı	ł	î	1 1	ı	1	ı	ı	ı	t	1 1	ı	١	ł	1	ı	1 1		ı	ı	ı	ı	1 4		0	0 -	0		0	14.6	
	2	2	5.	0	00		D 17			, LO	0.	0.	0	ς γ	ۍ ک			0	3	0.	5.	00			5.	0:	0.0	0 -	; ;	, L	0	0.	0	0.	5	٠,	· ~		]	5.	0.09	•
	STATION	10	0	0	0.0	o	, ,		7	7	7.	7.	7.	0	- c			. 0	3	3.	ش	e m	ה	, ,	7	7.	7	•			0	0.	0	0,	<u>.</u>	;		, (	3	3	83	î

NOV. DEC	222.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	
OCT.	122.00000000000000000000000000000000000	0
SEP.		1
JULY	000000m60	ı
JUNE	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3
MAY	12.000000000000000000000000000000000000	- 4
MAR.	2000 115.59 115.59 100.00 115.59 100.00	
FEB.		ŧ
JAN.	10000 100000 10000 10000 10000 10000 10000 10000 10000 10000 100000 10000 10000 10000 10000 10000 10000 10000 10000 100000 10000	
DEC.	10.6 10.0 10.0 10.0 10.0 10.0 11.2 11.2 11.2	1
NOV.	21.0 12.2 10.00 10.00 10.00 12.4 12.7 12.6 11.6 11.6 11.6 11.6 11.6 11.6 11.6	
ATION	000000000000000000000000000000000000000	7 0 70

SEP 10000 Protomyctophum crockeri (cont.) 11.1 17.0 17.0 17.0 10.0 1155.98 115 FEB. 13.2 10.0 10.0 111.5 10.00 11.00 12.22 12.22 12.29 10.00 10 DEC. STATION 97.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1000.0 1100.0 1113.0 113.0 113.0

TABLE 4. (cont.)

	DEC.		DEC.	12.2
	NOV.		NOV.	13.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
	OCT.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	OCT.	0.0000000000000000000000000000000000000
	SEP.		SEP.	
t.)	JULY	22.2 11.8 7.8 7.8 10.5 10.4 11.1 2.7 2.6 0.0 2.1 8 10.2 10.2 3.4	JULY	000000000000000000000000000000000000000
i (cont.	JUNE	11.3 0.0 0.0 2.9 2.9 2.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	JUNE	0.0000000000000000000000000000000000000
rocker	MAY		MAY	222.22
ophum c	MAR.	0.0 0.0 0.0 3.2 0.0 0.0	MAR.	22.26.3 11.66.3 11.66.3 12.99.9 0.00 0.00 0.00 0.00 0.00 0.00 0.0
Protomyctophum crockeri	FEB.		FEB.	
Pro	JAN.	2 2 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	JAN.	1 10000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	DEC.	23.7 23.7 23.7 20.0 0.0 0.0 0.0 0.0 0.0	DEC.	0.0000000000000000000000000000000000000
	NOV.		NOV.	100.00 10
		335.0 440.0 440.0 47		880 990 900 900 900 900 900 900
	STATION	117.0 117.0 117.0 117.0 117.0 1120.0 120.0 123.0 123.0 123.0 127.0 127.0	STATION	77770 88000 881000 990000 991000 993100 993100

Symbolophorus californiensis (cont.)

DEC.	
NOV.	
OCT.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
SEP.	
JULY	29 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
JUNE	2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
MAY	133.5 133.5 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10
MAR.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
FEB. M.	
JAN.	223.000 111.000 123.00
DEC.	
NOV.	0.00 0.
N(	0.00 0.00
STATION	97.0 97.0

TABLE 4. (cont.)

	DEC.	11111		DEC.	1 1	1 1	ł	I f	í	i	1 1	ł	ŧ	1 1	1	ł	1 1	i I	1	ı	ı	ı	i	f	i	ŝ	l i	ł	ŝ	1 1	i
	NOV.	1 1 1 1 1		NOV.	500	* 1			63.2		· -	1	12.3	10	11.6		34.0		• >	1	 	0		21.	0		0		4 4	22.5	0
	OCT.	20000		OCT.	1 1	1 1	t	1 I	ı	1	1 -	- 1	I	t I	ı	ı	ı	1 1	ı	ł	I	1 [	ı	ı	1	1	1 1	1	1	1	4
	SEP.	11111		SEP.	1 1	1 1	ł	1 1	ı	i	1 1	1 1	ı	1 1	1	1	1	l i	. 1	ı	ı		1	ł	ı	1	1 1	1 1	. 1	ŧ.	å
ont.)	JULY	0.0 0.0 10.8 0.0		JULY	0.0	0	· ·	-	0 0		F I	1 1	0.0		10.2	1	13.6	1 1	1	ı						9	0		50	22.6	7
nsis (c	JUNE	3.1	crenularis	JUNE	1 1	1 1	ı	1	l l	ı	1 -	1 1	1	ŧ	1 1	1	ı	1	1	1	I	1	- {	1	4	ļ	1	j	! !	ł	I
Symbolophorus californiensis (cont.)	MAY	11111		MAY	1 1	1 1	Î	1	1 !	1	î	I (	1 1	1	1 1	l	}	1	1 1	1	0	11.6	0			4.	0 0	7 0	0 0	0.0	
rus cal.	MAR.	0.00	Tarletonbeania	MAR.	8		45.1		l i	1.	10.1	0	J. C	i	1 1	- 1	1	1	1 1	1	1			1	1	1	l e			11.0	-
olopho	FEB.	111000	Tarle	FEB.	2.5	0	1 1		2.0		ı	l I	0.0		10.3	0 1	5	M =			5.		n a	7:	0	2.			32.0	0	i
Sym	JAN.	890		JAN.	1 1	1	1 1	i	1 1	1	ı	ı	1 [	1	1 (	l	ı	ł		ı	1	I	ł 1	1	ı	1	ł	1	1 1	1	ı
	DEC.	0.00		DEC.	0.0		1:	(		0	10	23.4	1 1	10.9		C	14.7	2		0			0	0			0		-10	0.0	
	NOV.			NOV.	1 1 1 1	1	1 1	I	1 1	ı	1	i	1 1	ı	ı	1 1	1	1	1 1	ı	l	ı	{	1 1	ı	ı	1	i	1 1	100	1
		45.0 70.0 80.0 42.0 60.0			52.0	0	00	0		200	0	5	00	6	0	2	0	5	00	· c	1.	00	D u	0	. 0	0	0.	m	ь У	0:	0.
	STATION	120.0 120.0 123.0 123.0		STATION	60.0	0	00	0		. n	3	m	m u	7	-	1:	7:	7.	1	-	0.	0.			0	0	m				3

	DEC.	283 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	NOV.	38.3 38.3 39.0 100.0 100.0 100.0 100.0 110.3 111.3
	OCT.	225 33 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	SEP.	
(cont.)	JULY	443.00 100.00
	JUNE	2.0000.0000.0000.00000.000000000000000
Tarletonbeania crenularis	MAY	112.5 6 13.0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
eania c	MAR.	111.1 111.1 111.1 111.1 111.1 111.6 22.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0
letonb	FEB.	13.0.0 4.0.0 1.0.0
Tai	JAN.	1111111100044000000000440
	DEC.	
	NOV.	13.1 13.1 14.1 10.0 10.0 10.0 10.0 10.0 10.0 10
		800.00 800.00
	STATION	7777.0 7777.0 7777.0 7777.0 7777.0 7777.0 7777.0 880.0 883.0 883.0 883.0 883.0 883.0 883.0 883.0 883.0 883.0 883.0 883.0 883.0 990.0 990.0

TABLE 4. (cont.)

	DEC.	0 0 0	2.9 0.0 24.1 0.0 11.9 12.0		DEC	000000000000000000000000000000000000000
	NOV.	0.0		0.0000000000000000000000000000000000000	NOV.	
	OCT.	0 0 0		000000	· · · ·   [H	10.0 11.9 10.0 0.0 11.9 11.0 11.0 11.0 4.1 11.4 4.2
	SEP.	1111	1 1 1 1 1 1 1	11111111	SEP.	
cont.)	JULY	1111	111111	111111111	JULY	00,
)	JUNE			000000000000000000000000000000000000000	· · · ·   Z	0000 000000000
crenularis	MAY			11.90 0.00 0.00 0.00 0.00	S 00.	000000000000000000000000000000000000000
	MAR.		0000000		ZIX	000000000000000000000000000000000000000
Tarletonbeania	FEB.	1111	111111	1 1 1 1 1 1 1 1 1 1	FEB	
Tai	JAN.			000000000000000000000000000000000000000	12	0 0000000000000000000000000000000000000
	DEC.	0 0	0000	0.011111	0.0 0.0 0.0 DEC.	
	NOV.	00.011		0000   00000	. 15	0.0000
	2	00000	20000000	760 760 760 760 760 760 760 760 760 760	80. 70. 70.	227 229.0 229.0 229.0 229.0 220.0 220.0 220.0 220.0 220.0
	STATION	00		00000000000000000000000000000000000000	7. 7.	90.0 90.0 90.0 91.5 93.0 93.0 97.0 97.0 110.0

	DEC.	1	ł	1	ı	ł	ı	ı	1	1	ı	ı	1	I	ı	ı	1	1	ı	ı	1	1	1	ı	1	1	ı	1	ı		000	DEC.		ı										
         	NOV.	ı	ı	I	i	I	1	1	ı	ı	ı	١	i	ı	ł	i	ı	ı	I	ı	i	ı	ı	١	ŧ	ı	ı	١	ı		7301	NOV.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
         	OCT.		2		2.4			m,		÷			9.		7	و	-	2	4.					9			9				E 6		ı	ı	ı	1	ı	ı	ı	1	l	ı	1	1
	SEP.	i	ı	ı	ı	ı	ı	ı	ı	i	ı	ì	ı	ı	١	1	ı	ı	ı	ł	1	ı	ı	1	1	ı	ı	ı	ì			SEP	ŀ	ı	ı	ı	ı	1	ı	1	ŧ	I	ı	1 1
	JULY				0.0	0																		- 4		0		0			1	JUEZ												0.0
cont.)	JUNE		a		0.0		- 0					1	ı	ı	ı	ı	ı	ı	1	1	1	ı	1	1	i	i	1	ı	ı	productus		JUNE	1	ı	1	ı	ı	ŧ	ı	1	ı	l	ı	1 1
Synodus spp. (cont.	MAY	ı	ì	ı	ı	ł	ŧ	ı	ı	ı	ŧ	ı	ı	ı	ı	1	i	1	ì	i	ł	ı	ı	1	1	1	ı	1	١			MAY	ì	ı	ł					j.				0.0
supouh	MAR.	ı	ı	1			0.0										ł	i	ł	ı			0.0	•	1	1	ı	ı	ş	Merluccius		MAR.	1	ł	ı	ł	ì	***	ı	1	1	1		10.0
OJ.	FEB.	ţ	ł	ı	l	ł	ı	ı	ı	ı	0.0					i						0		0						Æ		FEB.					8		5		0	11.	6.	44.8 35.0
	JAN.	0 0			0.0							ı	ı	ı		0.0		ı	ı	ı	١	1	ı	ı	1	ŀ	ı	1	1			JAN.		ł		1			1	1		1	ı	1 1
	DEC.		•					-													0	0			0 1	· -		8 (	10.9			DEC.	1 4	0.0	-	0								0.0
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	STATION	177	. / [	. 0	20.	200	20.0	200	200	, ,		٠ د د د			י הר	, C	5.7.		37.	. 1 2	20.	300	300		د د د				137.0		1	ATI	10		7					0	0	3	3	73.0

TABLE 4. (cont.)

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	SEP.	l	1	I	ì	1	ŀ	l	ı	ı	i	ı	I	ı	I	ı	ŀ	I	ł	l	ı	ı	1	I	1	1 1	i	}	ı	ł	ı	Ι	1	1	ł	1		l	I	I	1	ł	ı	1	I	1
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	JAN.		1	I	ı	ı	1	ŧ			6	2		490.	37.		0	3	7 .	4	3	0	ω.	37.0	9	7	ů.	0 -	0	9	-		183.	2	52.	0	0	0	0	S.	53.	0	0	0	12.	V
	DEC.	0 0	0	0.0						- 0		0.0	0	2.	- 0		I	ţ	i	ì	{	1	i	1	ŀ	wages	I	I	1 1	ŀ	1	1	1	ı	ı	1			ı	{	I		0.0			1
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	NC	10		, , ,	5	0.	5	0	0	7	2	3	4	5	0	0.	3	A.	4	5.	9	7.	0.	41.0	2	ب س	- T	9.	00	. 0		-	5.	0	0	0	0	-	1	8	6	0	4.	5.	6.	0
	STATION	1 6	· ~	7	7	7	7	7	0	0		0	0	0	0.	0.	-	7	-	1			3	83.0	~ ~	m	٠,	3	J (	, ~	, ~	M	3.	3.	3	3	· ·		5.	5.	5.	5.	7.	7.	7 .	7

1	DEC.	4	0	- 4	0.0		t	1			0	0.0				- 8	9	ŧ	ł	į				0.0			8		0 1		0		j	l	ı	1	1	I	1	I	ı	1	ı	1	ı	
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Merluco	FEB.			i	ł	ı	i	1	ı	ı	1	ı	ı	1	ı	1	ı	ı	ı	1	1	ı	ı	t	i	ı	i	i	1	i t	ı	1	1	ı	i	ŀ	ı	ı	ı	ı	ı	ı	ı	ŧ	ı	
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STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
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03.0 40.	1	- 0	38.	t	474.	0.	0	ı	1		ı	ì
03.0 45.	1	0	- 6	ł	3580.6	0	0.0	ı	1		i i	ſ
03.0 50.	1		0.	1	52.	0.	0		1		1	Į
07.0 32.	i	0	4	I	i				I		ı	I
07.0 33.	1	0	2.	1	ı				ı		ţ	1
10.0 32.	ı		9	l	0.	ı			1		1	ı
10.0 33.	1		3	1	65.	ı	0	0	ŀ		ī	i
10.0 34.	ı	0		1	ص	1	0		ı		I	l
10.0 35.	,			ı	32.	ı			ŧ		4	i
10.0 40.	ŀ			ı	756.	i			l		ı	i
10.0 45.	ı			ŧ	49.	í	0	0	ı		ì	i
10.0 50.	10			ı	65.	1		. 0	ł	0	1	ı
10.0 55.	1	0		ı	0	1	- 0		ı		1	i
10.0 60.	1		0	I	6.	ı	- 0		ı		ı	I
13.0 29.	1		0	ļ	0.	1			1	. 0	ı	1
13.0 30.	1			1	3.	1	0		1		i	ŀ
113.0 31.0	ı	0.0	0.0	1	13.0	ŀ	0.0	0.0	ı	0.0	Į	i
13.0 32.	ł			1	6	ı			1		t	L
13.0 35.	1		ij	*	29.	1			1		ı	1
13.0 40.	ı		0	ı	7	1	- 0		ı		1	l

TABLE 4. (cont.)

				Merluco	Merluccius productus	oductus	(cont.					
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
12 O AE		1			151.6	ı	0.0	0.0	1		ı	1
13.0 43.	ı	0 1		1		1	0.0		ı		i	ı
13.0	ı			ł	13.2	1		0.0	ı		ł	ı
13.0 00.	ı			ı		1		9.0	ı		ı	1
17 0 20	l			1	i	1		2.6	ı		1	i
17.0 30	ı		0	ı	1	ı		0.0	ı	4.9	ı	1
10.00	I			1	37.3	1		0.0	ı		i	1
19.0		9	•	ŀ	· C	ı		10.7	ŧ		1	ı
20.02	1 1			1	0 (	ı	0.0	10.1	ı		ı	ı
20.0 30.	1 1				12.3	ì		0.0	i		ı	ı
123.0 37.0	1 1		ł	19.8		ı	1	0.0	ı	0.0	1	i
27.0 34	ı	0 0	1		1	ı	1	0.0	ı		ı	1
27 0 35	ı	6 6	t		1	ł	ı	0.0	1		ě	1
27 0 36	ı		i		i	١	i	0.0	ł		ı	1
27.0 40.	ı		i		ł	ı	1	0.0	ţ		ı	i
30.0 27.	1		1			ı	1	0.0	Î		ı	ł
30.0 28.	ı		ı			ι	ı	0.0	ı		1	1
30.0 29.	ı	- 4	ı		24.0	ł	1	0.0	ı		ţ	ı
30.0 30.	ı		ł			ı	1	0.0	l		ı	1
30.0 35.	ı	- 0	ı				ı	0.0	ı		ı	î
30.0 40.	ı		ı			l	ı	0.0	I		t	i
30.0 60.	1		ı			ı	ı	0.0	ı		i	1
33.0 20.	ı		1		1	ı	ı	0.0	ı		ı	l i
33.0 23.	ı		ı		ı	ı	I	2.5	ł		1 1	1 1
33.0 24.	1		ł		å	ı	Į		1		l i	1
33.0 25.	1		ı		ı	1	ı	0.0	al.			ı
33.0 30.	ı		ı		ı	ı	ı	0.0	ı		l (	
33.0 35.	ı		ì		i	ı	i	ي 4 د	ı		l !	
37.0 23.	ı		ı	- 6	ı	i	ı	0.0	ł		l I	
37.0 24.	ı		i	0.0	ł	l	ì	000	l i		ı	1
37.0 30.	1		l		ı	ł	1	•			ı	ı
37.0 35.	ı		l		I	ı	i	0.0				
					Macr	Macrouridae				]           		1
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
700			10		1	1 .		0.0	ı	1	i	ì
30.0		4	13.2	ı	0.0	0.0	0.0	) ) )	ł	0.0	ı	0.0
33.	ı	0.0	0	1			í	0.0	ı		i	1
					Ophid	Ophidiiforme	S					
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
73.0 53.0	1	0.0	i	0.0	0.0	0.0	i	7.8	I	1	0.0	I

TABLE 4. (cont.)

1	DEC.	0000	DEC.	0000	DEC.	000
	I	00000				
	NOV	0000011111111	NOV	[ 1   1   1	NOV	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	OCT.	11.30 0.00 0.00 0.00 11.33	OCT.	0000	OCT.	22.55 22.57 22.59 10.66 10.66 110.88 10.88
	SEP.		SEP.	1111	SEP.	
	JULY	11.6 0.0 0.0 0.0 0.0 0.0	JULY	0.0 11.8 0.0 0.0	JULY	0.0000000000000000000000000000000000000
cont.)	JUNE	11.0 0.0 0.0 0.0 0.0 0.0	JUNE	11.0	JUNE	0.0000000000000000000000000000000000000
_	MAY	0.0 0.0 0.0 11.8 11.6 44.8 11.7 0.0 13.9 3.1 11.8	MAY	11.0 2.5 0.0 20.7 taylori	MAY	00000000
Ophidiiformes	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	0.0 0.0 0.0 0.0 0.0	MAR.	000000000000000000000000000000000000000
Ophi	FEB.	0.0 0.0 	FEB.	5	FEB.	20.00
	JAN.	00 0000000	JAN.	00000	JAN.	
	DEC.	00000 000 000	DEC.	0.0	DEC.	00 000000000000000000000000000000000000
	NOV.	0.00	NOV.	0000	NOV.	0 000
	N	50.0 51.0 51.0 51.0 51.0 51.0 51.0 51.0	N	46.0 45.0 51.0 50.0 50.0	N	22222222222222222222222222222222222222
	STATION	73.0 77.0 80.0 80.0 87.0 91.5 93.0 95.0 97.0 113.0	STATION	81.5 83.0 83.0 87.0 120.0	STATION	93.0 90.0 97.0 97.0 97.0 103.0 113.0 123.0 123.0

	DEC.			DEC.	DEC.	1 1 1
	NOV.			NOV.	2.7	i i i
	OCT.	2.4 1.7.0 1.7.0 1.7.0 1.0.0 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.9 1.1.0 1.0		OCT.	· · · · · · · · ·   [	2.0 1.6 17.0
	SEP.			SEP.	SED.	1 1 1
	JULY	0 0000000000000000000000000000000000000		17 1	0.0 0.0 JULY	1 1 1
ae	JUNE	26.2 0.0 0.0 0.0 0.0 0.0 0.0		JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.00
Ophidion scrippsae	MAY	0000	Ceratioidei	×	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0
hidion	MAR.	000000000000000000000000000000000000000	Cerat	$\alpha$ 1	0.0 0.0 0.0 0.0 - - 0.0 Gobie	000.0
Op	FEB.	000000000000000000000000000000000000000		FEB.	FEB	1 1 1
	JAN.	000000000001111111111		JAN.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	000
	DEC.	0.0000000000000000000000000000000000000		101	0.0 0.0 0.0 0.0 0.0	0.00
	NOV.	000111111111111111111111111111111111111		NOV.	0.0 2.9 2.9 0.0 0.0 0.0 0.0 0.0	111
	7	22.0 22.0 337.5 337.5 332.0 332.0 332.0 335.0 227.0 227.0 227.0 227.0 227.0			90.0 90.0 100.0 60.0 70.0 70.0 70.0 80.0 60.0	29.0 29.0 30.0
	STATION	85.0 100.0 100.0 1100.0 1110.0 1120.0 120.0 120.0 130.0 133.0 133.0		AT	83.0 90.0 90.0 100.0 103.0 103.0 107.0 107.0 113.0 STATION	95.0 103.0 103.0

TABLE 4. (cont.)

	DEC.	1 1 1 1 1 1		DEC.	í		DEC.	111111		DEC.	0.00		DEC.	1
	NOV.	1 1 1 1 1 1		NOV.	1		NOV.	0.		NOV.	0 0 1 1 1 1 1 1 1 1 1		NOV.	0.0
	OCT.	15.5 17.7 17.7		OCT.	0.0		OCT.	00 100000		OCT.	0000000		OCT.	1
!	SEP.	1 1 1 1 1 1 1		SEP.	ı		SEP.	1111111		SEP.	11111111		SEP.	l
	JULY	0.04000		JULY	11.6		JULY	0.00		JULY	000000000000000000000000000000000000000	1	JULY	0.0
nt.)	JUNE	0.00		JUNE	I	a	JUNE	3.1 0.0 0.0 0.0		JUNE	0.00000	91	JUNE	1
dae (co	MAY	1 1 1 1 1 1 1	Exocoetidae	MAY	i	is saira	MAY	13.0	Atherinidae	MAY	35.3300	Trachipteridae	MAY	1
Gobiesocidae (cont.	MAR.	0.00	Exoco	MAR.	0.0	Cololabis	MAR.	0000000	Athe	MAR.	13.2	Trachi	MAR.	1
G	FEB.	000.		FEB.	0.0		FEB.	0.0		FEB.	4.		FEB.	0.0
	JAN.	000		JAN.			JAN.	0000000		JAN.	0 000000		JAN.	ı
	DEC.	000000		DEC.	0.0		DEC.	10.6		DEC.	0.0000000000000000000000000000000000000		DEC.	14.7
	NOV.			NOV.			NOV.	0.00		NOV.	0.00.011		NOV.	
	STATION	110.0 31.7 110.0 32.4 113.0 28.8 120.0 22.4 133.0 20.6 133.0 21.0		STATION	130.0 40.0		STATION	83.0 90.0 85.0 99.0 97.0 97.0 110.0 70.0 113.0 35.0 133.0 35.0		STATION	63.0 55.0 81.5 43.5 91.5 26.8 93.0 26.9 95.0 28.0 97.0 29.0 110.0 23.0		STATION	0.09 0.79

1	DEC.	000000000000000000000000000000000000000	DEC
	NOV.	12.20 0.00 0.00 0.00 0.00 0.00 0.00 0.00	. VOV
	ocr.	0000 0000	OCT.
	SEP.	11111111111	H H H H H H H H H H H H H H H H H H H
	JULY	11.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	JULY 12.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
(cont.)	JUNE	0.0000180000	OUNCE
idae (c	MAY	11.6 0.0 11.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	MAAY
Trachipteridae	MAR.	11.6 0.0 10.7 10.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR. 2.1 2.1 3.0 0.0 0.0 0.0 0.0 22.9 32.6 11.3
Trac	FEB.	000	FEB.  11.6 5.0 6.2 7.0 0.0 0.0 0.0 0.0 0.0 0.0
	JAN.	000000000000000000000000000000000000000	JAN.
	DEC.	12.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	DEC.
	NOV.	900000000000000000000000000000000000000	NON
		770.0 660.0 660.0 660.0 660.0 660.0 670.0 870.0 870.0 870.0 870.0 870.0 870.0 870.0 870.0 870.0 870.0 870.0 870.0 870.0	60.00 60.00 60.00 60.00 60.00 60.00 60.00 60.00 60.00 60.00 60.00 60.00 60.00
	STATION	70.0 70.0 77.0 80.0 80.0 80.0 87.0 87.0	STATION 60.0 60.0 63.0 67.0 70.0 73.0 73.0 73.0 77.0 77.0 77.0 7

	DEC.	j	1		0.0	-			13.2		1	1	1		0.		ı	ł	1	1	ı	ı	I	ı	l	1	1 -	1 1	I	1	ı	ı	ı	1	1	I	I	I		1	1	l	1	I
	NOV.	0.0	1	I	1	ı	1 6	ı	ı	0.0					ı				1	1	ŀ	t	I	I	l	1	ł	1 1		1	1	1	1	1	ı	1	ł	ı	1 1	1 1	1	1	ı	ı
	OCT.	1									ı	ı	1		0.0		!	ı						0																		0.0		
	SEP.	1	ı	ı	ı	ı	1 1	ı	I	1	I	1	1	1	1	ı	I	ı	t	1	I	I	ı	1	ŀ	ı	I			ı	ı	1	í	1	I	ŀ	I	1		i i	1	1	ŀ	I
	JULY				0		0.0	9	į	1	J	1	I	i	ł	1	1	1	ı	ı	l	1	1	1	t	Į	ı	1 1		1	1	ı	ţ		0.0		l			0	0 0	0.0		
(cont.)	JUNE		ı	1	ł	I	1 1		0	0	3.0				- 0	- 0	2.8			0	0.		m ،				4	4	0	8			- 0		1							19.3	0.	
spp. (co	MAY					0		0	0	0	0 0	- 4		2.		. 0		- 0		0.						0			0	0	0	0.0			-	0.0			ļ	1 1	1	ŀ	ı	ı
Melamphaes	MAR.	1	m				200		0		0 (				0	- 0		ļ	1	3					] (				٠		; c	0.0		1	I	1	1		0		0 1			0.0
Melan	FEB.		1	I	ı	ı	I		+ 1	1	1	1	1	1	1	1	1	1	ļ	ı	1	1	ŀ	ı	1	ı	I	1	1	} (		ı	1	i	1	ı	ı	ļ	I	1 1	1	ı	ı	ı
	JAN.	1	0.0	- 0			200	0	0	0	8 1	0 0					6			- 0					0	0			u a		T C	0 0				0						0.0		
	DEC.	12.1		10.6	1	I	ı			ė	1 1	I	1	0.0		1	-	ı	ı	1	1	1	1	1	ı			0		0	۰	50.0		- 0	0		1		o ,	7.11	0			0.0
	NOV.	1 1 1	0.0				0.0	0	1			0	1 0	1			0	0	- 0		0	0	0.0	0		1	I	I	l	1		1	ı	t	1	ı	ı	ı	t		, 1	1	1	1
		1 0	. 0	0	0	0	0	0 1			· c			9	2	0	0	0	0	0	0	5.	0.	0	0.	0	0	0.0					0	5	0.	0	0	0	Q1 L	n c	D L	70.0	0	5
	STATION		000	3.0	7.0	7.0	7.0	0.7	0.0				0.0	5.0	3.0	3.0	3.0	3.0	3.0 1	7.0	7.0	7.0	7.0	7.0	0.16	0.00	0.00	00.00	0.00	0.00	0.50	03.0	03.0	0.70	0.7.0	0.70	0.70	0.70	10.0	0.01	0.01	110.0	10.0	13.0

TABLE 4. (cont.)

	DEC.		DEC.	
	NOV.		NOV.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	OCT.	000000000000000000000000000000000000000	OCT.	0 0000000000000000000000000000000000000
	SEP.		SEP.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	JULY	11 0.0 22.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	JULY	0.0 10.8 3.0 0.0
(cont.)	JUNE	12.2 12.2 11.7 11.7 11.7 10.0 10.0 10.0 10.0 10.0	JUNE	20.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
spp.	MAY	tra spp	MAY	12.6 12.9 12.9 12.6 12.6
Melamphaes	MAR.	13.2 0.0 	MAR.	2.8 0.0 0.0 0.0 111.1 11.4
Mela	PEB.	11.0 0.0 0.0 0.0 0.0 0.0	FEB.	2
	JAN.	000000000000000000000000000000000000000	JAN.	008000000000000000000000000000000000000
	DEC.	0.00 0.00 0.00 0.00 0.00 0.00 0.00	DEC.	
	NOV.		NOV.	00000
	Z	50.00 50.00 50.00 50.00 60	Z	90.0 100.0 100.0 20.0 50.0 60.0 70.0 35.0 70.0 80.0 80.0
	STATION	113.0 113.0 113.0 113.0 113.0 117.0 117.0 117.0 120.0 120.0 120.0 127.0 127.0 133.0	STATION	87.0 90.0 90.0 97.0 100.0 100.0 100.0 107.0 110.0 117.0

TABLE 4. (cont.)

1	DEC.		DEC.	1 1 1	DEC.	20000	DEC.	0.00
	NOV.	رن ۱۱۱۱۱۱۱۱۱۲۱ م	NOV.	111	NOV.		NOV.	0.0
	OCT.	0.00000	OCT.	0.00	OCT.	7.8 10.0 0.0 0.0 0.0 11.4 22.4	OCT.	11.2 0.0 0.0 0.0
	SEP.	1111111	SEP.	) ( t	SEP.	1111111111	SEP.	
	JULY	32.00	JULY	0.0	JULY	0.0000000000000000000000000000000000000	JULY	0.0000000000000000000000000000000000000
snsou	JUNE	0.0 0.0 0.0 0.0 0.0	JUNE	0.00	JUNE	0000000	JUNE	2.6
s bispi	MAY	0.0 0.0 0.0 - - sus grac	MAY	0.0 0.0 0.0 0.0 0.0 - Sungnathus Spp	MAY	0 0.0 2 0.0 2 0.0 0 0 0.0 0 0 0.0 0 0 0 0.0 0 0 0 0	MAY	100000000000000000000000000000000000000
Scopelogadus bispinosus	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	0.0 0.0 0.0 Syngnat	MAR.	0.00 0.00 0.00 0.00 0.00 0.00	MAR.	10.00
Scope	FEB.		FEB.		FEB.		FEB.	111111
	JAN.	000000011	JAN.	0.0	JAN.	0000 00000	JAN.	1.8
	DEC.	0.000	DEC.	24.5	DEC.	000000000000000000000000000000000000000	DEC.	0.0
	MOV.	0.222.000	NOV.		NOV.	0.	NOV.	12.5
	STATION	90.0 90.0 93.0 93.0 97.0 97.0 117.0 130.0 133.0 95.0	STATION	100.0 50.0 103.0 70.0 110.0 60.0	STATION	81.5 43.5 87.0 32.5 87.0 32.7 90.0 27.6 90.0 28.0 95.0 28.0 103.0 28.0 113.0 26.0 120.0 35.0	STATION	80.0 50.1 83.0 44.0 83.0 44.7 83.0 45.0 91.5 26.8 91.5 27.0

TABLE 4. (cont.)

	DEC.	1 + 1		DEC.	1	1	DEC.	1 1	1	1	1 1	ı		0.0	0 1	0.0	1 1	0	11.0	0.0				0.0		į	i i	1	1	1 1	1
	NOV.	1 1 1		NOV.	ı		NOV.	0.0	0.0	0-0	0.0	0 1	1	i i	l 1	1	1	1 1	1	Li	1	ı	0 . 0		1	1		ı	1	1	1
	OCT.	10.0		OCT.	0.0	1 1 1 1	OCT.	1 1	ı	ı	1 1	C	0 0			0.0			0 0			- 6								17.5	
	SEP.	1 1 1		SEP.	ı		SEP.	1 1	1	ı	1	ı	1	ł	ıı	1	I	i i	ı	í	l I	ł	ı	١	ı	ı	1 :	1 1	ł	i i	I
	JULY	0.0		JULY	0.0		JULY	10.8	0.0				0.0										ı	ı	1 I	ı	ı	l I	1 0	0.0	0.0
$\widehat{}$	JUNE	0.0	ia	JUNE	ı		JUNE	1 1	1	ı	ı	í	1 1	ı	1 1	1 1	ı	1 1	i	1	1 1	0.0			0.0	4			0.0		0.0
e (cont	MAY	1 1 1	a fimbria	MAY	2.3	Cottidae	MAY	1 1	1	ı			0.0				0								9 1	. 4		4		0.0	ı
Agonidae (cont.)	MAR.	0.0	Anoplopoma	MAR.	0.0	Cot	MAR.		1	ı			0.0 14.4			0.0									10.6		11.5		11.7	1 ~	55.9
H	FEB.	0.0	An	FEB.			FEB.	0.0		2			1 1	ı	1	l I	ı	ı	l I	i	1	1	ı	ı	1 1	ı	ı	1 1	1	1 1	l
	JAN.	2.5		JAN.	0.0		JAN.		l 1	ł	1	6	0 0 m 0	0.0	0.0	15.8	0	0.0	0.0	0.0	2.6		0.0							1.4	
	DEC.	0.00		DEC.			DEC.			0 0	0.0		i i	1	ı	1 1	0.0		0.0		0.0	9	0		0.0			-		0.0	
	NOV.			NOV.	0.0		NOV.		1 1	1	ı		0.0				•	0.0	71.1	• • L	ł	1 1	0.0		1	1	0.0	1	l I	1 1	1 1
		25.0 34.0 35.0			44.7			0.	. 7	0	2	0	4 4	5.	8	٠ و د	7.	7.	20		2.	J.L	; 6	9	ه و	000	0	-: 0	0	30.3	36
	STATION	117.0 127.0 130.0		STATION	83.0		STATION	10		٥٣		7.	4	, n	3.	د د		5	7:	. &	œ (	, 0 C		-	ر س	o ro	97.	00.	03.	107.0	10.

TABLE 4. (cont.)

	DEC.	1 1	1	DEC.	13.6 6.8 6.8 12.9 12.9		DEC.	0.00 0.
1	NOV.	1 1	 	NOV.	00000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NOV.	000111111111111111111111111111111111111
1	OCT.	0.0		OCT.	000000000000000000000000000000000000000		OCT.	000008000
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SEP.	1-1	1 1 1 1 1 1 1	SEP.			SEP.	1111111111
1	JULY	8.8	 	JULY			JULY	10.00
•	JUNE	2.7	noratus	JUNE	00000	au	JUNE	0.0000000000000000000000000000000000000
e (cont.	MAY	1 1	Scorpaenichthys marmoratus	MAY	00000000000000111	pteridae	MAY	10.0 10.1 3.0 8.0 0.0
Cottidae	MAR.	0.0	enicht	MAR.	122200000000000000000000000000000000000	Cyclopteri	MAR.	000 00000
	FEB.	0.0	Scorpa	FEB.	111.22.23.2		FEB.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	JAN.	0.0		JAN.	000000000000000000000000000000000000000		JAN.	00 00000
	DEC.	0.0		DEC.	0.0000000000000000000000000000000000000		DEC.	00 00 00 00 00 00 00 00 00 00 00 00 00
	NOV.			NOV.	000000000000000000000000000000000000000		NOV.	000000000000000000000000000000000000000
	STATION	113.0 31.0		STATION	63.0 60.0 73.0 51.0 77.0 48.0 80.0 52.0 81.5 45.0 83.0 44.7 83.0 44.7 83.0 50.0 83.0 50.0 83.0 50.0 83.0 50.0 110.0 32.4		STATION	60.0 52.0 77.0 48.0 83.0 48.0 83.0 50.0 91.5 26.9 93.0 26.9 110.0 32.4 113.0 29.0

TABLE 4. (cont.)

Hexagrammidae

•			: [		į	0	0.0		ان	0060
DEC.	1		DEC.	1		DEC.	1110		DEC.	1111111111110040111111111
NOV.	0.0		NOV.	0.0		NOV.	0.0		NOV.	17:1 10:0 10:0 10:0 0:0 0:0 0:0 0:0
OCT.	ı		OCT.	ı		OCT.	0000		ocr.	2.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00
SEP.	ı		SEP.	i		SEP.	1 1 1 1		SEP.	
JULY	0.0		JULY	0.0	1 1	JULY	0.00		JULY	
JUNE	i	tus	JUNE	ı	ns	JUNE	0.0	p.	JUNE	000000
MAY		9	MAY	ŧ	us pictus	MAY	0.0	epis spp	MAY	0.0000000000000000000000000000000000000
MAR.	į.	Ophiodon	MAR.	ı	Oxylebius	MAR.	12.8 0.0	Zaniolepis	MAR.	11.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
FEB.	5.2		FEB.	2.5	0	FEB.	4.9		FEB.	0004040
JAN.			JAN.	1		JAN.	0.0		JAN.	12.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
DEC.	0.0		DEC.	0.0		DEC.	0.0		DEC.	00 0000000 0000000000000000000000000000
NOV.			NOV.	ı		NOV.	0.0		NOV.	0.0000000000000000000000000000000000000
2	51.0		Z	52.0		Z	60.0 44.0 47.0 32.0		2	550 550 550 660 660 600 600 600
STATION	70.0		STATION	60.09		STATION	70.0 81.5 81.5 90.0		STATION	63.0 663.0 666.0 667.0 73.0 73.0 73.0 80.0 80.0 80.0 81.5 83.0 83.0 83.0 83.0 83.0 83.0 83.0 83.0

TABLE 4. (cont.)

	DEC.	i i	1	1	1	L	-	1		1	L	1	1				DEC.		ı	I	1	ı	Differen	1	1	į	1	1	1	1	1	1	1	ł	1	ı		1	1	1	1	1	1	1	1	1	I	
1	D	1															D																															
       	NOV.		1	I	ı	I	1	1	l	l	I	I	i	i	ı		NOV.	1	0.0				9 - 1			0	1	0	12.4	- [	ı	I	27.0	1	52.6		1					I	6	. P	0 (		0.0	
	OCT.	1				5		· -	- 1	o.	0	1	46	7.50			OCT.		ı	1	ı	1	1	ł	1	ı	ı	ě	ı	1	į	1	ı	1	1	ı	ŀ	1	1	ı	i	mpe	1	ŀ	1	ı	ı	
	SEP.		1	ş	ı	ı	ı	1	I	ı	1	1		ı	ı		SEP.		ı	ı	i	ı	ı	ı	. 1	1		ı	1	1	ı	ı	1	1	ı	1	1	l	1	1	1	1	1	ı	I		1 8	
	JULY	1		- 0	. 0	-		0	0	0	-		0	0.0			JULY	1	20.00		: -		· -	0		٥	0.02	) _	: - I	1	ı	ı	10.7	Į		0.0		0.89		ļ	1	1	V	0		0	23.4	
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Scorpaena spp.	MAY	1	ı	ł	i	í	ı		ı	j	1			3	ı	spp	MAY		l l	Į	1	1	-1	ı	1 1	i .	l !	. 1	ı	1	1	1	1	1	1	ı	1	1	and the second	Į	1	ı	a	סר	53°T	9	0.0	
Scorpe	MAR.		ı	- 0				0	0	- 0	i		ı	ı	1	Sebastes	MAR.		i I			0	2.01	, ,	0				1	1	A	35.5	1	1	ı	ı	ı	ı	ì	-	ı	ı			1 1		l I	
	FEB.	1 1 1 1 1 1 1 1	1	1	ı	į	ı	ı	1	ı		0	0	0.0	0		FEB.	1	N O	200	0	כ			10	000	0	. 77	20.0	1	1	ł	33.4	1		14.		2		A		4 13	, ,	- '	000		29.6	1
	JAN.					0		0	0				I	ı	I		JAN.	i	1 1				I (	}	1	ı	i	l	1 1	1	1	1	1	ļ	1	1	1	!	ſ	ŝ	ı	1	1	1	1 1	1	1 1	
	DEC.	1 1 1 1 1 1 1	1	- 0		0	0			- 0	1	6	0	0.0			DEC.	1	000		0	> c	0	5	1 0	. 77	٠ د د	י ה	2 N C	· -	[	1	ł	9	34.7	1	-	C	0.0	-	0	0		5	9	7 -	7.17	þ
	NOV.		ł	ı	ı	1	ł	1	į	1		ı	ı	ı	1		NOV		t	ì	ı	ı	ı	1	l	ı	I	- Open	1 1	ı	1	1	ı	ı	1	ı	1	1	1	ı	1		١	l	Į	1	F I	
			_	P		° u	0.0	0	0	0		e di i	5.	50.0	2.			1	0 0	7	ń	0 1	٠ د د	0	0.0	G	2	ດ ເ	L		· · ·		. 0	6	0	5	9		ایا د	10	·		s,	٠ (	200	٠ د د	70.0	9
	STATION		2	200	000	000	-07	20.	23.	23	, ,	. 17	27.	133.0	37.		CTATION		0	0.0	0.0			0.	0	٠ د د	m c	5	ى ب	9 0	) (	, (	, 4	7	7	7	7			. [		. [	•				20.07	9

	DEC.	ı	<b>i</b> 1	1 - 1	1	1	ŧ	í	1	ı	ł	â	i			1	!	ł	ı	ı	ŧ	í	í	i	1 1	i 1	1,3	1	5.7		13.5		i	ů O r	- 4	•	; ;; C	•	116.0	) 	ı	l	1
	NOV.						0			0		-:		8	, k		o c	•	0 (	7	0.	i	I	ı	1	i	ı	ŝ	i	I	ı	i	I	ł	1	I	i I		. 1	ı	ı	ı	1
	OCT.	ı	ı	1	1	ı	1	ı	1	ı		ı	ı	1	I	ł I	i	ŧ	1	1	ı	15.	0	0.	٠ د						i.	6,					, <sub>K</sub>	4°C			4.0	4	0 0
	SEP.	1	ı	1 1	- 1	ı	ı	l	ı	ı	ı	ı	ı	ı	ţ	i	1 1	. 1	1	ŀ	١	1	ł	ı	ı	1 1	ı	١	1	1	ı	ı	I	1	l	i	t I	l	1	ı	1	1	ı
	JULY	0.0	9-			2	2	m								-i -		1 c		• (	0		0		• •						2.		2.	. ₽			4 H		? c				33.8
ont.)	JUNE	ı	ı	1 1	) 1	í	i	ı	ŧ	1	ŀ	1	ı	F	İ	į	1	1 !	1	ı	ı	ì	ı	ı	ı	1		ı	-1	ı	i	ı	ı	i	ı	ł	ŧ	Í	ı	ı	. 1	ı	ı
spp. (cont.	MAY									9					20 c		4.0		٠,		0			7.		-; <			, 6		2.	1.	-	6		4.	٥,				0 1		34.0
Sebastes	MAR.	1	ı	10		; ;	; 0	0 (	7	7		2.		0	ů.	5	900		n a	o –		2	3.	75.	08.	0 0	.7/			41.	65.	7	26.	78.	36.	47.	0	a g	70.	В		·	183.7
Se	FEB.			ى		70.		0		960	0	51.5	0.	1	ı	ı	1	l	1 1	1	ı	l	ı	ı	ì	1	l	ł I	1	ı	1	ı	I	ı	ı	ł	ŧ	l	I		1 1	ı	ı t
	JAN.		1	ı	I	1 1	ı	1	ı	1	ı	t	1	ı	28.	60.	80	07.				3	0	85.	21.	6	32.	р л	200	7:	88	52.	37.	7.	38.	18.	0	623.	000				193.8
	DEC.	12.4	1					•		17.2					0	51.	01.	22.			10		t	i	ı	ı	ı	1	1 1	1	i	1	ı	ı	1	ı	1	ì	1	1	7		<b>1</b>
	NOV.		ı	ı	ı	1	ł I	1 1	ı	į	1	1	ı	ŧ	ı	ı	ł	ı	I	i	1 1			9	25.	2.					٠ ,	2	7.	3.	9.	8	4.	12.	104.0	7.5			171.1
	Z	10	0	0	٠ ش	9,	n c		. a	• • •	٠	0	5.	0.	0.	1:	2	m	4		•	٠,	4	4	5.	9	7	5		٠.	٠.	4	4	5.	8	9.	0.	7	s o	· ·	0.	. [	38.0
	STATION	10	0	3.	3	m r	د	٠ د	, r		:	7	7	7	0.	0	0	0	0	0			, ,	· ·	-	-	-	m c	ۍ ر •	ب د	, ~		3	3	3	ς.	3.	<u>.</u>	٠,	, c	٠ س	0 1	85.0

	DEC.	1		v. v.	4	7.	-		100	4	. 78	4	-	'n	l	l		7		س	0	2	- 0	٠ س	0.0	0,		26.	di di	l	1	ı		13.4	1				2	2 6		00		11.1		0	
	NOV.	1	ı	ı	ı	I	ì	I	l	I	ι	Į	I	1	I	I	1	1	1	ı	ı	I	ı	1	1	1	I		-		0.00	n C		I	1	ş	1	1	ı	Į	ì	1	ı	1 1	ı	1	
	OCT.		0.0		0	0		0.0			0		٠,	0	-	0	0		0	-	. 0	5.			- 6	0		0	1	ı	1	1 1			0		0	0 (	0	0		0		0.0	9 1	0 1	
	SEP.		ı	ı	-	1	ı	l	I	ł	1	I	ŀ	ł	1	ł	1	ı	ı	d out	1	ı	ı	ı	1	1	I	i	ı	ı	i	L	ì	1 1	. 1	·	ı	ı	1	1	ı	1 1		1 1	1	ı	
1 1	JULY		0.0			0					0		3						0		0	1	ı	ı	f	1	I	1	1	1	}	l	į	1 1	1 !	i	. 1	1	1	1		ı	١	1 (	. 8	1	
cont.)	JUNE		1	1	ł	ł	ı	í	1	1	ı	ı	ı	1	ł	1	ı	ı	ı	1	ı								0		0		0				0		0		0			0.0		0	0
spp. (c	MAY		24.4	0.	- 0		0		5	3	37.	8	23.	4.							0			- 6	51.	Ξ.	22.	- 6	0	0	- 6	0		0		1 0	0	ก่	0	0	0	0	0	0.0	9	0	0
Sebastes	MAR.	AR	257.0	0.	0.	43.	00.	-	43.	52.	54.	72.	75.	2	2		- 0		0	-	52.	0		0	0	0	2	3	54.	7	86.	ä		0	l e	11.	0	o c	5,	0			n (	0.0	0	0	.02
Se	FEB.		ı	Į	1	1	ı	1	ı	1	ı	ı	I	1	i	i	1	1	1	1	1	ı	1	1	I	1	I	1	ı	{	l	1	I	1	ţ	l	i	1	ł	ě	1	I	ı	-9	ı	I	and the state of t
	JAN.	-	77.5	4	5.	5.	3	4	73.	m	48.	2	76.	1		0	0.0			1	_	24 6	1 1	α	169.0	44	8	2.	m	5	20.			0	1 4	0	- 0	0 (	71	65.	œ		2	0.0			6
	DEC.	1	1			7.5			- 0	)	1	ı	1	1	ł	١	1		0	0	8	0	0 1			- 1			ł	1	1	ł					0	0 1	ņ		5				ı	ı	i
	NOV.	1	4.6		1	ı	í	1	1		00	190.1	270	V			0 1	0	ı	1	ı	1	. (	ı	- 1	ł	1	- 4	0		0.0				ł	1	I	ļ	ļ	1	1	ı	1	1	25.1	9	
	ATION		0 1	220.0	7.0 32	7.0 33.	7 0 34	7.0 35.	36.0.7	40.7	7 0 45	0.7	7.0	50.0	700	000	000	יוני איס	0.0 U.	0.0	0.0	0.00	0.0 27.	200	.0.0		32.	0.0	0.0	0.0	0.0 60.	0.0 70.	0.0 80.	1.5 26.	1.5 26.	1.5 27.	1.5 28.	1.5  29.	1.5 30.	3.0 26.	3.0 26.	3.0 28.	3.0 29.	3.0 30.	3.0 35.	3.0 40.	3.0 45.
	ST		∞ σ	o a		0	α	σ		o a	0 0	0	o a	0	0	0	0	0	0 0	0 0	0	0 0	n C	n C	n O	10	10	10	10	1 0	10	U	Ü	51	O)	O1	91	U1 1	UT	ψ	J	OI	O1	01	J1 1	U11	71

1	DEC.	201   1   1   1   1   1   1   1   1   1
	NOV.	00
	OCT.	0.0 0.0 11.8 11.8 11.8 11.3 11
	SEP.	
	JULY	0.0000170000000000000000000000000000000
(cont.)	JUNE	28.5 2.2 3.0 5.2.2 3.0 6.0 11.0 11.0 11.0 10.0 10.0 10.0 10.
spp. (ca	MAY	12.2 12.2 14.4 86.7 86.7 86.7 86.7 86.7 86.7 86.7 86.7
Sebastes :	MAR.	288.6 126.9 126.9 127.2 220.2 270.2 270.2 10.0 10.0 113.2 120.2 12
Sel	FEB.	
	JAN.	11.8 11.8 3.35.0 0.0 0.0 0.0 12.6 11.9 11.8 11.8 11.9 1
	DEC.	24.0 40.5 44.8 24.0 24.0 11.2 28.7 20.0 00.0 00.0 11.2 20.8 20.8 20.8 20.0 11.2 20.0 11.2 20.0 11.2 20.0 11.3 10.0 11.0
	NOV.	10000000000000000000000000000000000000
	2	550 5655 570 570 570 570 570 570 570 5
	STATION	99999999999999999999999999999999999999

TABLE 4. (cont.)

	DEC.	 	1	ł	ŧ	1	Ł	I	I	1	1	i	l	1	1	1 8			ĺ	i i	i i	ì	ļ	ı	ı	i	ı	1	i	i	i	ı	ì	ı	1	1	ı	ļ	ł		DEC.		I
	NOV.		ı	1	1	ı	ł	l	I	ı	i	ı	ſ	l	l I	l í	1 1	1	1			ı ı	1	1	ı	1	I	ı	1	ı	1	I	ı	l :			ı	1	l		NOV.	l.	0.0
	ocr.	1 3							. 0		0		0		0		0	8	0	0	0		0	0 .		8 8					- 6	0.0			0	0	0	0	0		OCT.		1
	SEP.		1	ı	ŀ	ŀ	ł	ı	1	ı	ł	i	l	ı	I	1		. 1	. !	l i	ł	î l		1	ı	1	ı	ı	1	ı	ı	ı	ŧ	ŀ	ł	l	l	Į	1		SEP.		1 1
	JULY	1 4		0	. 0			. 0		. 0			0		0	0	0	0	0	0		0	00		0 1	0 0			- 0	0		0.0			0	0	50	6	7		JULY		
(cont.)	JUNE	1 .	0.0	2		4	i	. 0		0.	0	6	0	÷.	0	0		0	0	50			0		0 -	• • I	l	ì	ı	1	į	ı	I	I	l	ł	ı	1	I	.a	JUNE		1 1
spp. (c	MAY		ł	ı	I	1	ı	1	ı	ı	ı	I	L	ı	I	1	}	1	l	1	ı	1		1 1	ı	I	ı	ı	ı	1	1	1	1	l	I	1	I	1	I	es aurora	MAY	1	12.2
Sebastes	MAR.	1 .	0	i	65.	5	- 6	0	0	1	1	ı	ł	ł	i	ŝ		0	0		0 0	0	0	0	, 0	7.4	4	0	œ	5	i			6.7.	0	4	l	1	I	Sebastes	MAR.	1	000
Se	FEB.		1	1	ł	ŀ	Į	1	I	i	1	1	1	I	į	1	i	l	I	I	l	i	I	1 1	I	-		0			0	0.0		0	0	0	0	0	0		FEB.	1 0	0.0
	JAN.	1	0.0	0		34.	35.	2	3	2	÷	0	0	0	7	N.	4 (	0	0	0	0	0	0	6	0	0	1	1	1	1	ł	1	440	l	Į	ı	1	I	I		JAN.	-	1 1
	DEC.	1	0.0	- 0	0	0.	0.	- 0		0	0	- 0	0	0	0		0	0	0	0	0	0	0	0	0	0	0 1		1 0			2.7				0		0	0		DEC.	1	0.0
	NOV.		ı	1	1	ı	ŧ	1	ı	ì	1	ı	•	i	ı	I	j	i	and a	l	l	ı	1	}	1 1		l	ı	1	1	l		ı	1	i	ı	l	1	l		NOV.		1 1
	Z	10		0	0	2.	5	0.	0	5	9	7	8	0	5.	0	9	m (	7	٠ د د	9	0.	3			) L	1 4	7	- 60	6	4.	35.0	9	1	0	0	5.	0	5 .		N	1 6	53.0
	STATION	100		7 2	13.	13.	13.	13.	13.	17.	17.	17.	17.	17.	17.	17.	18.	19.	20.	20.	20.	20.	20.	20.	200			25	23	23.	27.	127.0	30.	30.	30.	30.	33.	37.	37.		STATION	10	77.0

TABLE 4. (cont.)

1	DEC.	0.0000000000000000000000000000000000000	DEC.	000 00000 000
	NOV.	0.0000	NOV.	00000 0000000
	OCT.	00000 00	OCT.	
	SEP.	11111111	SEP.	
	JULY	12.6	JULY	
(cont.)	JUNE		JUNE	
	MAY	12.2 0.0 0.0 3.0 0.0 0.0 3.2 3.1	MAY	
Sebastes aurora	MAR.	2.5 3.2 3.2 0.0 0.0 6.8 6.8 0.0 0.0	MAR.	10.2 10.2 - - - - - - - - - - - - -
Sebas	FEB.	0.011111111	FEB.	211 22440 111 100.337440 000.00
	JAN.	0.00	JAN.	000000000000000000000000000000000000000
	DEC.	0.01	DEC.	
	NOV.	0000000	NOV.	
	7	60.0 80.0 480.0 70.0 30.0 60.0 40.0		2525.0 655.0 6
	STATION	77.0 83.0 83.0 87.0 90.0 93.0	STATION	663.0 663.0 663.0 770.0 770.0 770.0 770.0 883.0 883.0 883.0 883.0 883.0 883.0 883.0

TABLE 4. (cont.)

 	DEC.	0.0000000000000000000000000000000000000		DEC.	0000401001	DEC.	
	NOV.	0.		NOV.	00	NOV.	
	OCT.	000 00000		OCT.	000000000000	OCT.	000000000000
	SEP.	1111111		SEP.		SEP.	
	JULY	000000000000000000000000000000000000000		JULY	000000000000000000000000000000000000000	JULY	00000000000
(cont.)	JUNE	000000	S	JUNE		JUNE	000000000111
	MAY	00000000	s levi	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	
Sebastes jordani	MAR.	10.0 39.0 39.0 113.7 113.7 397.2 21.8	Sebaste	MAR.	10.6 92.4 225.5 14.4 12.8 22.0 9.5 17.4 19.3 19.3 0.0 12.7 2.2 0.0	MAR.	12.4 0.0 0.0 0.0 0.0 0.0 11.4 24.6
Sebas	FEB.	1111111		FEB.	2.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0	FEB.	20.00
	JAN.	00 000000		JAM.	113200000000000000000000000000000000000	IK	11.3 11.3 11.6 11.6 12.9 10.0
	DEC.	000 00000		DEC.	00 00 00 00 00 00 00 00 00 00 00 00 00	DEC.	000000000000000000000000000000000000000
	NOV.	0.011111		NOV.	000000000000000000000000000000000000000	NOV.	! ! ! ! ! ! ! ! \$ ! ! ! ! ! ! ! ! ! ! ! !
	2	28.0 28.0 28.0 28.0 28.0 29.0 29.0		2	0.004444444460.000.0000.0000.0000.0000.	NO	31.0 245.0 245.0 27.0 340.0 33.0 33.0 34.0
	STATION	8888 990.0 993.0 993.0 1035.0		STATION	67.0 67.0 67.0 681.5 883.0 883.0 987.0 997.0	TATI	113.0 113.0 117.0 117.0 117.0 117.0 119.0 123.0

	DEC.	111111	DEC.	1 1	1	ı	1	1 1	1	1	I	I	Į į	1	1	1	i	1 1	1	ı	1	1	}	I	I	ic		0.0	0.0		
1 1 1 1	NOV.	111111	NOV.	0.0			i						000			0				0 0					ı	I	ı	1 .	! !	ı	
	OCT.	0000000	OCT.	1 1	1	1	I		I	ı	ı	1	1 1	I	ı	ı	l	1 1		1	ı	1	ı	ı		0		0			0
	SEP.	1111111	SEP.	1	1	1	I	1		-	1	1	1 1	ŀ	ı	I	ı	1	1 1	ı	1	I	1	ι	ı	ı	I	l	1		)
•	JULY	0000000	JULY	0.0	0.0		ı						0.0																		
(cont.	JUNE	inis	JUNE	ı	i t	ı	ţ	1		ı	ı	ı	k 1	ı	ı	ì	ı	l		1 1	i	ı	1	ł	ŀ	I	ı	ı	ı	I	ı
onaldi	MAY	paucispinis	MAY	ı	i I	1	ı	ı	ll	1		0.0	١٢										- 0			- 4	В				
Sebastes macdonaldi	MAR.	5 0.0 4 - 2 3 2.6 0 33.4 8 - Sebastes	MAR.	11.3	1 1	1	9.1		1 1	1	ı	ı	i	l i			0.				,		0	-		3	0	0	14.4	· ·	
Sebast	FEB.	10.5 10.5 7.4 7.4 29.3 0.0 0.0 2.8	FEB.	1 0		0.0	1									F		0.0			- 1	î	ı	ı	1	i	ŧ	1	1	ţ	1
	JAN.	111111	JAN.		1 1	ı	ı	l	l i	)	ı	ı	ı		1	ı	ŧ	i	1 0		° ~	42							0.0		
	DEC.	0000000	DEC.		00	0 0	1 1	ı	<	÷	0 6	0	0.0			0.0		0.0		. 0	a			0		1	ı	ł	I	ı	ı
	NOV.		NOV.			ı	ļ	ı	1	1 1	ı	ı	1		l I	ı	1	1	I	1	1 1	ı	ı	1					0.0		
	Z	339.0 339.0 347.0 30.0 30.0	Z	0.	0	) L	. 0	0	'n c	⊃ r.	,	0	65.0			0	5	0.	ů.		, ,	, , <			4	9	1.	2.	4.	4	9.
	STATION	123.0 123.0 127.0 127.0 127.0 130.0 133.0	STATION	0.	٠ د		 m	3.			: -		70.0	00	٠.		7	7.	7	0						-	3	3	3	3	3

TABLE 4. (cont.)

	DEC.	12.9 23.2 23.2 23.2 10.0 12.9 12.9 12.9 11.1 11.1	DEC.	0000
4 1 1 1 1 2	NOV.	000	NOV.	000000000000000000000000000000000000000
	OCT.	2 2 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	OCT.	000004
	SEP.		SEP.	
•	JULY	000000000000000000000000000000000000000	JULY	000000000000000000000000000000000000000
(cont.	JUNE	o.00 0.00 0.00 0.00 0.00 0.00	JUNE	} 
paucispinis	MAY		MAY	0.0000000000000000000000000000000000000
	MAR.	21.1 0.0 11.4 0.0 24.5 0.0 0.0 13.0 0.0 10.7 10.7 0.0 10.0 13.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	23.0 11.6 0.0 24.2 24.2 3.2
Sebastes	FEB.		FEB.	122.1
	JAN.	1000 1000 1000 1000 1100 1100 1100 110	JAN.	0000000
	DEC.	000 000 0000000000000000000000000000000	DEC.	000000000000000000000000000000000000000
	NOV.	10000 0000 0000 0000 0000 0000 0000 00	NOV.	
	N.C	0.100 0.000 0.	NOI	880.00 5
	STATION	883.0 883.0 883.0 883.0 887.0 887.0 887.0 990.0 990.0 990.0 990.0	STATIO	67.0 70.0 70.0 70.0 70.0 70.0 880.0 883.0 883.0 883.0 883.0

TABLE 4. (cont.)

	DEC.	0		DEC.		t	1 1	ł	ı	[ [	1	ı	1 1		DEC.	0.0	0.0		DEC.	0.0
		0.0														0.				
	NOV	0011111		NOV		1	1 1	1	1	1 1	1	1	1 1		NOV	0 1 1	1 1		NOV	1111
	OCT.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		OCT.	0.0	e e	29.T	2.2	2.1	4 r w c	i m	1.9	18.5		OCT.	0.0	0.0		OCT.	2.0 0.0 0.0 0.0
	SEP.	11111111		SEP.		į	1 1	I	ŀ	1 1	ı	1	1 1		SEP.	1 ( )	1 1		SEP.	1111
	JULY	0.0  0.0 0.0 11.0 2.8		JULY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	000		JULY	0.00	11.2		JULY	0.0 2.3 14.1 12.7 16.3
(cont.)	JUNE		٥.	JUNE	2.7	0.0	•	) • •	ı	1 1	1	1	1 1		JUNE	1 1 1	0.0	spp.	JUNE	;
s spp.	MAY	0000011111	Prionotus spp	MAY		ı	ii	ţ	ı	j l	ı	ı	1 1	Blennioidei	MAY	12.8			MAY	0.00
Sebastolobus spp.	MAR.	10.7	Prionc	MAR.	0.0			0.0	0.0	0.0	1	ı	1 1	Blen	MAR.	000	0.0	Hypsoblennius	MAR.	00000
Sepas	FEB.	0.000		FEB.		ı	1 1	0.0	0.0	0.0	0.0	0.0	0.0		FEB.	0.0	1 1	H	FEB.	1 1 1 1 1
	JAN.	000011111		JAN.	1 4	0.0	0	0	ı	1 1	ŧ	ı	1 1		JAN.	12.0	0.0		JAN.	00000
	DEC.	00000		DEC.	0.0	)	0	0 0	- 6			0	0.0		DEC.	0.0	11.8		DEC.	0.0
	NOV.	0000		NOV.		ı	1 1	ı	I	I I		1	1		NOV.	0.0	0 0		NOV.	0.00
		55.0 660.0 770.0 770.0 290.0 221.0 50.0			31	0:	о r	9	7.	د د	÷ -	0	22.0 23.0			48.0	90.		and the case of th	443.5 399.4 37.2
	STATION	87.0 90.0 93.0 97.0 100.0 130.0 133.0		STATION	113.0	17.0	20.0	30.0	30.0	30.0	33.0	37.0	137.0		STATION	83.0	0.0		STATION	81.5 81.5 83.0 85.0

	DEC.	80000000
	NOV.	
	OCT.	10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 11.3 10.0 11.3 10.0 10.0 11.3 10.0
	SEP.	
	JULY	10000000000000000000000000000000000000
(cont.)	JUNE	11 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
s spp.	MAY	12 000000000000000000000000000000000000
Hypsoblennius	MAR.	
Hypso	FEB.	
	JAN.	
	DEC.	
	NOV.	
	2	22222222222222222222222222222222222222
	STATION	885.0 887.0 887.0 887.0 887.0 887.0 887.0 887.0 887.0 887.0 887.0 897.0 807.0 807.0 807.0 807.0 807.0 807.0 807.0 807.0 807.0 807.0

TABLE 4. (cont.)

	DEC.		8	I	1	1	1	1	1	1			DEC.	١	ı	I	I	1	I					0	0	I	0.0		0		2.9		1	ı	ı	i	LI	1	ı	ı	ł	ı	l
	NOV.		ı	i	ı	ı	1	į	ı	1			NOV.	8.2	0		0		ì	i	í	1	1 1	ı	i i	1	1	1	1	)	1	ţ	ı	ı	1	1	1 1			i	ł	ı	I
	OCT.	Ĺ						3	0	12.8			OCT.	1	Ι	1	1			ů.	0	÷			0.0					0								0	1.0		0		0
	SEP.		ı	ı	1	ł	ł	1	ł	ı			SEP.	ı	1	1	ı	1	ŧ	ı	I	ı			1 1	ı	I	į	l	1	1	ŀ	ì	i	ı	ŀ	ı	1	} (	1	ı	1	i
	JULY	1							1 1	2,3			JULY	1	0.0										200					l	1 1	ı	1	1	ı	ı	ı	1	1 1	1	ı	0.0	
(cont.)	JUNE		ı	ı	í	ı	ł	1	ı	i			JUNE	ı	ł	ı	1	ł	ı	ı	1	ı	I	١	î j	ı	1	١		0.0		•							0.0	•			ı
s spp.	MAY		ı	ı	1	ŀ	1	1	1	ł		Clinidae	MAY		0.0									9	000	8 (						8	0 0	0 0					000		0 6		
Hypsoblennius spp.	MAR.		1	i	ı	ı	ŧ	ı	ı	ı		Cli	MAR.		ŧ								0	0	000	·	0 5	0.		2,		0 1		0 0	0.	0.	13.	m e	ت ه			)	i
Hypsol	FEB.		- 0	- 0	. (			٠	0	000			FEB.	1 4	- 4	0			1	ı	ı	1	ı	ı	1 1	ı	ı	ı	i	ı	1	1 1	1	ı	1	1	ı	i	1	ł		ι	ı
	JAN.		1	ı	1	i		ı	ı	1			JAN.		ı	1	ı		0.0		0.0	0.0	0.0	5,3	000		0.0	0.0	0.0	0.0	0.0			8 6					0.0	; o		4	
	DEC.		- 4	1	•	6		0	0	•	0		DEC.	1	•	0.0				1	ı	i	ı	l	1 :	1	0.0	•							0.0	)	ı		0.0	4	0		
	NOV.		1	1	ı	١		. !	ı	ı 1	ı		NOV.		1	1	ı	1							0.0			21.1	Ì	1	ŀ	1	1	l f	1		0.0		1	1	!!	ı	ı
	2		_	· ·	4 C	7 =	* 0	•		0.77	3.		Z	10		. α	, ,			7	2	5.	9.	0	i.		) L		2	7.	1.	9	, x	n ⊂	· -	8	6	0.	φ.	9.0	or	- -	30.6
	STATION		22	,	) (		٠ د د د	23.5	37.	137.0	31.		STATION	10		, ,	. [		, ,		<u>س</u>	3	3	33	m'	ů,	0 5	7	ω.	0.	7	ر ب	ů.	o L	5	7	7	97.	03.	03.	03.		107.0

	DEC.		t	1	1	ı	ł	1	1	1	I	1	1	ł	ı	l	ı	E		DEC.	å	į	Į	ı	ă di	i	ş	ı	1	1	l	1			0.0	0	0				. C		)	
	NOV.		ı	i	1	1	1	ı	1	ı	J	ı	į	1	1	1	1	1		NOV.	1				0 (	D (	0 4		2.6			1	ı	1	1	i	ŧ	I	ı	I	l l	ŀ	ı	
	OCT.	1	000						-			- 4	4							OCT.		! !	i	ŀ	I	ı	1	1	l	I			0			0		8				0		1
	SEP.		1 1	ı	ı	ı	ı	1	ì	ı	1	ı	ì	1	1	ı	1	ı		SEP.		1	ı	ŧ	1	1	ı	ı	ł	ı	ſ	i	-	ı	ı	ł	1	i	1	ſ	****	1	ı	
	JULY	1	0.0		9 (			1		0	0	0 (		- (			0	12.8		JULY	1	8	6	0	9	0		0	0 1			0			0			0		00	0.0	0	0 0	b
	JUNE			0		0.0	0 (		0	0	0	6	ı	ı	ı	Į	1	i		JUNE		1 1		1	1	1 1			ı	1	ı	1	1	1	ı	ı	1	ı	ı	ı	£ -	1 1	1	
e (cont.	MAY	1	7.6	i	1	1	ţ	ı	ł	- 1	1	1	ı	1	\$	1	1	1	Gobiidae	MAY		l I	) [		0	0	0	0	0 1				0.		0	0			0		0.0	0	0	0
Clinidae	MAR.		10	ا ا ا	٥٣	ייי	; c	0	0	0	0	0	0	0	0	0	0	1	Gob	MAR.		1 :	1	l	ı	1		0	0	0	2 2	- 0	0.		0		0.	0	0	0	0.0	0		0
0	FEB.		Į	ì	1 1		1	ı	1	l i	}		0	0	0	0	0	0.0		FEB.	1	0.0	0	0	0		0	S		Į	ı	ı	ı	1	ì	1	ı	ı	1	I	ı	I		
	JAN.	1	0.0	• ת	0	0	0	0	0	0	0	0					ı	1		JAN.		1	1	l	ı	Į	ì		φ c	0				0			0	- 0			0.0		0	8
	DEC.			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0		DEC.	1	0	6	0	0	O	0	0	0.0	0	1	I	1	1	I	-	1	1	1	I	ı	l	0	6
	NOV.		ı	1	ŀ	ı	Į	!	ļ	I	l	ı	1	1	I	I	1	1		NOV.		}	1	ı	ì	ı	l	1	t			0 (					0		- 0		0.0	0	0	ı
			-	2	ب ا	6 L		000	ית	-1 -	4	0 i	0.1	,	000	7 .	o c	35.0			1	0	2	7	m	0	0		O r	- c	, r	. 4	4	-	2.	3.	4.	4	5	8	49.0	0,		
	STATION		07.	10.	10.	10.	10.	13.	23.	13.	20.	20.	23.	23.	23.	. 17	30.	137.0	1	STATION		0	0	2	0	0	د	m				-		· ·	3	3	~	3	3	3	83.0	m	n ,	0

	DEC.	000000000000000000000000000000000000000	
	NOV.	111111111111111111111111111111111111111	
	OCT.	4 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	SEP.		
	JULY	122.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
( •	JUNE	11.00 10.00	
e (cont.	MAY	10000 10000	
Gobiidae	MAR.	20.00 10.00 10.00 10.00 10.00 10.00 10.00 11.00 11.00 11.00 10.00	
	FEB.		
	JAN.	71 17 17 17 17 17 17 17 17 17 17 17 17 1	
	DEC.	100000 1 4 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	,
	NOV.	• • • • • • • • • • • • • • • • • • •	
	2	332 332 332 332 332 332 332 332 332 332	)
	STATION	8888888887.00 87.00 87.00 887.00 887.00 887.00 887.00 887.00 8887.00 887.00 887.00 887.00 887.00 887.00 897.00 897.00 897.00 897.00	ì

TABLE 4. (cont.)

	DEC.		DEC.	1	DEC.	111111
	NOV.		NOV.	ı	NOV.	111111
	OCT.	47.0 47.0 110.3 10.0 0.0 10.0 10.0 10.0 10.0 10	OCT.	1	OCT.	6.1 2.2 2.4 2.4 2.5 2.5 3.5 4.5 5.5
	SEP.		SEP.	1	SEP.	111111
	JULY		JULY	1	JULY	000000
•	JUNE	i cus	JUNE	- d	JUNE	000000
e (cont.	MAY	aenigmaticus	MAY	eres spp	MAY	111111
Gobiidae	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	Halichoeres	MAR.	0.0
	FEB.		FEB.	11.4	FEB.	11111
	JAN.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	JAN.		JAN.	000000
	DEC.	77.72 77.72	DEC.	0.0	DEC.	0.00
	NOV.		NOV.		NOV.	
	FATION	10.00 13	ration	57.0 80.0	TATION	13.0 80.0 17.0 25.0 17.0 26.0 17.0 30.0 17.0 80.0
	TI	000000000000000000000000000000000000000	STATION	0.	STATION	000000

TABLE 4. (cont.)

	DEC.		DEC.	0.0010011111111111111111111111111111111
	NOV.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NOV.	
	OCT.	19.0 19.0 19.0 19.0 11.1 10.1 10.1 10.1	OCT.	0.0 0.0 0.0 0.0 0.0 12.1 10.6 10.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	SEP.		SEP.	
	JULY	000000000000000000000000000000000000000	JULY	14.1 12.0 0.0 2.0 2.0 0.0 0.0 0.0 0.0 0.0
(cont.)	JUNE	0.0 0.0 0.0 0.0 1	JUNE	13.1 13.1 13.1
spp.	MAY	californica	MAY	000000000000000000000000000000000000000
Halichoeres	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	
Hali	FEB.	00 000000000000000000000000000000000000	FEB.	0.000
	JAN.	0000 0	JAN.	000000 000000000 0000
	DEC.	000000000000000000000000000000000000000	DEC.	00 000 00000
	NOV.		NOV.	000000 00
	STATION	120.0 40.0 120.0 45.0 120.0 45.0 120.0 50.0 123.0 35.7 123.0 35.0 127.0 34.0 130.0 25.6 130.0 25.6 130.0 29.0 133.0 20.6 137.0 20.7	STATION	81.5 45.0 83.0 44.7 83.0 44.7 83.0 50.0 90.0 80.0 91.5 26.8 91.5 30.0 91.5 30.0 93.0 50.0 103.0 35.0 107.0 34.0 107.0 34.0 107.0 35.0 110.0 32.0 110.0 32.0

TABLE 4. (cont.)

1	DEC.	111111	DEC.	0000	DEC.	1 1 1
	NOV.	111111	NOV.		NOV.	1 1 1
1	OCT.	0.0 0.0 2.5 11.1 11.1 11.8	OCT.	0.0 0.0 0.0 0.0 0.0 0.0 2.0 2.0 2.0 10.0 113.6 1113.6 1113.6	OCT.	2.1 9.0 23.1
	SEP.	111111	SEP.		SEP.	111
	JULY	0000000	JULY	11422	JULY	0.0
cher	JUNE	12.8 0.0 0.0 - - - nnis	JUNE	3.1 2.0 0.0 0.0 0.0 0.0 0.0 0.0	JUNE	111
hus pul	MAY	8.2 12. - 00. - 0. 	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	] [ ]
Semicossyphus pulcher	MAR.	0.0 0.0 0.0 0.0 0 0 0 0 - 0 0 Chromis pu	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	0.0
Sem	FEB.	0.0 0.0 0.0 0.0	FEB.		FEB.	000
	JAN.	0000	JAN.	000000000000000000000000000000000000000	JAN.	
	DEC.	0000000	DEC.	000000000000000000000000000000000000000	DEC.	0.00
	NOV.		NOV.	0000	NOV.	
		37.22 24.0 32.0 32.0 33.0 50.0	2	44444222222222222222222222222222222222	2	35.7 37.0 39.0
	STATION	85.0 113.0 120.0 120.0 127.0 127.0 127.0	STATION	81.5 83.0 83.0 83.0 95.0 95.0 11.2 12.3 12.3 12.3 12.3 12.3 12.3 12.3	STATION	123.0 123.0

TABLE 4. (cont.)

					Howella brodiei	brodie	1					
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
113.0 80.0	I	ı	0.0	ı	ı	ı	0.0	2.3	1	0.0	i	ı
					Вгата	a spp.					;	1
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
103.0 35.0 103.0 80.0 130.0 60.0	}	0.0	12.4	0.0	0.0	0.0	0.0	0.0		0.0		 
					Cara	Carangidae						
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
20.0 40.			0 0				0.0			1		
130.0 27.0	ł	0.0	•	0.0	0.0	1	0	0.0	ì	4.2	ı	1
30.0 28.	1		1	0.0		į	ı	0.0	ı		ı	ı
33.0 20.	ı		1	0.0	į	i	1	0.0	ı		ı	ł
33.0 21.	I		1	0.0	ı	1	ı	0.0	I		ı	4
33.0 23.	1 1		1 1		1 1	ļ ļ	1 1	0.0	1 (		1 1	1 1
37.0 22.	1		ı		1	1	١		1		1	ı
37.0 23.	1		ì	0.0	ı	ı	ı		ı		1	ı
37.0 35.	I		1	0.0	ı	i	ı		ı	_	ı	í
				4	Seriola	lalandi	i					
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
90.0 90.0 110.0 60.0 127.0 35.0 127.0 36.0	0.0	0000	11.8	0.00	12.4	0.0	0.0	0.0 0.0 0.0		28.4 9.3	0.0	
				Trac	Trachurus s	symmetricus	icus					
STATION	NOV.	DEC.	JAN.	FEB.	MAR.	MAY	JUNE	JULY	SEP.	OCT.	NOV.	DEC.
77.0 80.0 77.0 90.0 80.0 80.0 83.0 60.0 83.0 60.0	0.00	0.0	0.000	1 1 1 1 1 1	2.9 2.9 0.0 53.6 0.0	000000	1 1 1 1 1 1 1	14.3 0.0 47.0 11.2 5.5	11111	0.00	0.00	0.0

	DEC.	11:0
	NOV.	00000
	OCT.	000000 00000000000000000000000000000000
	SEP.	
•	JULY	18.4 49.5 331.6 58.9 6.0 0.0 0.0 0.0 0.0 10.8
(cont.	JUNE	330.0 10.0
symmetricus	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
maks so	MAR.	0.00 0.00
Trachurus	FEB.	
7	JAN.	
	DEC.	
	NOV.	
	Z	337.0 34.0 35.0 36.0 37.2
	STATION	885.0 885.0 887.0 887.0 990.0 993.0 993.0 997.0 1000.0 1000.0 1003.0 1003.0 1003.0 1003.0 1003.0 1103.0 1107.0

TABLE 4. (cont.)

	DEC.		ı	. ;	ł	3	1 .	1	ı	į	ı	i	i	ı	ı	ı	i	ı	1	1	ı	1	ł	i	ı	i	ı	1	ı	1 1	ı		DEC.	ì	ł	ı	ł	i		DEC.	i	I
	NOV.		ı	l	ı	ı	ı	i	i	ı	ı	ı	ı	ı	ı	ı	i	1	ı	1	ı	1	ı	ı	ı	i	ı	ı	ì	1	}		NOV.	1	ı	1	ı	ı		NOV.	ı	I
	OCT.	1																	- 4	1				0 1	8				0.	27.0	0		OCT.		1.5					OCT.	2.1	3.1
	SEP.		ı	ı	ı	ł	1	‡	I	ı	1	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	1 1	١	1	1	1	ı	ł	I		SEP.	1	1	ı	ı	I		SEP.		ı
•	JULY	1																												0.0			JULY		0.0		0			JULY	0.0	
(cont.	JUNE	1				S		9.0		0														۰ ۷ ۵		1 1	1	1	ı	f	ı	rus	JUNE	0.0	ı	1	ı	ı		JUNE		ı
Trachurus symmetricus	MAY		i	ı	ı	ı	ı	ı	ı	ı	ł	i	ł	1	1	i	ı	1	1	ı	! !	1 1	ł	1 1	1 - 1	ł I	ı	ı	1	1	ı	a hippurus	MAY		1	ı	ı	ı	Gerreidae	MAY		1
is symme	MAR.		14.3			9		ı	i	15.2		13.2		1	ı	1	1	ŀ	12 4	r C		70.7				000	. 4	13.8	1	7.9	ı	Coryphaena	MAR.		ı	1	1	ı	Geri	MAR.	0.0	
rachur.	FEB.		1	i	ŀ	i	i	i	ı	ł	1	ı	ı	ı	i	ı	ı	ı	ı	i 1	)	I	ı	1 1	1 9	0.0		ı	0.0	0.0	0.0	COJ	FEB.		0.0	0.0	0.0	0.0		FEB.	0.0	0.0
I	JAN.		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					•		0				0.0	0					i	1		JAN.	0 0		1	1	i		JAN.		ı
	DEC.	ŀ				0.0	- 0	ŀ			0.0			1				1				0.0	0	ı				8 (	k (	0.0			DEC.	1 .	0.0					DEC.	1 4	0.0
	NOV.		ŧ	ı	ı	ŧ	Ι	i	ŧ	ı	1	ı	ı	ı	ı	ı	ı	i		i	I	ı	ı	i	I	l	1 1	H	ı	1	i		NOV.		1	1	1	1		NOV.		1
	7		0	5	0	5.	0	0	0	5	0	0	0	2	• • •	· -	•	•		ว่เ	3	÷.	0	0.	0	7	0			27.0	0		9	19	21.0	2	3,	0.		7	18	21.0
	STATION		10.	10.	10.	10.	10.	10.	10.	13.	3	32	7	2	- 27	17	17.	- 17	- / -	13.	20.	20.	20.	20.	20.	23.	23.	23.	27.	130.0	33.		STATION	117 0	133.0	33.	33.	37.		STATION	130.0	133.0

TABLE 4. (cont.)

	DEC.	1 1 1	DEC.	0.0		DEC.	0.0		DEC.	1 1 1		DEC.	1 1		DEC.	1 1 1 1 1
	NOV.	1 1 1	NOV	11111		NOV.	í	 	NOV.	1 1 1		NOV.	1 1	 	NOV.	91.1 0.0 0.0 34.7 36.8
	OCT.	11.3	OCT	0.0 7.5 6.2 3.1 18.5		OCT.	0.0		OCT.	0.0		OCT.	0.0		OCT.	1 1 1 1 1
	SEP.	111	SEP			SEP.	ı	 	SEP.	1 1 1		SEP.	l î		SEP.	1 1 1 1 1
	JULY	000	ү.шт.	0.0 0.0 0.0 0.0 19.4 14.1		JULY	0.0		JULY	1 1 1		JULY	31.7		JULY	0.00
( - )	JUNE	8 1 1	TIME	0.0	ns	JUNE	ı	ensis	JUNE	30.7 11.8 2.8	ceps	JUNE	0.0		JUNE	1 1 1 1 1
le (con	MAY		Haemulidae	13.4	nigricans	MAY	13.4	californiensi	MAY	000	us princeps	MAY	1 1	Sciaenidae	MAY	1111
Gerreidae (cont.)	MAR.	£ 6 1	Нает	0.00	Girella	MAR.	0.0	luna	MAR.	0.0	Caulolatilus	MAR.	0.0	Scia	MAR.	1 1 1 1 1
6	FEB.	000	F.F.R	0000	S	FEB.	1	Media	FEB.	1 1 1	Can	FEB.	0.0		FEB.	0.0 2.5 3.4 111.7
	JAN.		TAN	0.00		JAN.	0.0		JAN.	000		JAN.	0.0		JAN.	
	DEC.	000	DEC.	000000		DEC.	0.0		DEC.	0.0		DEC.	0.0		DEC.	23.2 10.9 6.0 19.2
	NOV.		NON			NOV.			NOV.	0.0		NOV.			NOV.	1111
	STATION	133.0 22.0 137.0 20.7 137.0 22.0	CHARTON	88.5 34.0 113.0 29.0 117.0 25.0 133.0 21.0 137.0 20.7 137.0 22.0		STATION	88.5 34.0		STATION	97.0 45.0 100.0 50.0 107.0 70.0		STATION	120.0 35.0 130.0 35.0		STATION	60.0 50.0 60.0 52.0 63.0 50.0 63.0 52.0 66.0 49.0

	DEC.	ı	1	ı	ļ	1	i	i	ı	ı	ı	ı	ı	ı	i	I	ı	ł	ı	33.0		0	2	40.4	7.			0	7		•	ı	i	i I	ı			•		•		13.0	, <				
	NOV.							4						ı	ı	i	ı	ı	I	1	ł	i	ı	ı	1	t	ı	i	ı	ı	ì	ı	ł	1 (	1	1 1		l 1	1	à I	ı	1 1		l I	ı	1	
	OCT.	1	1	ı	l	1	ı	I	ı	ı	ı	ι						- 8	- 0							- 6				0								•					•	8			
	SEP.	ι	1	ŧ	I	ı	ı	ı	ı	1	ı	1	1	F	1	1	1	ı	ı	1	ı	1	1	ı	ì	I	ı	l	I	ı	I	1	I	l	1 1	I	I	ı	ì	ı	I	t 1	ı	1 1	ı	ı	
	JULY																														0	٥.		, r	÷.c	٠ •				4		0.0	0				0
t.)	JUNE	ł	1	ı	ı	ı	ı	ı	ì	1	ı	ı	1	ı	1	I	1	ı	ı	1	1	ı	ì	ı	ļ	ŀ	ı	ı	1	ŀ	ı	j	í	ı	ı	I	1	ı	l	ı	ı	ŀ	1 0	3/.0		1	
Sciaenidae (cont.	MAY	1	ı					8				- 4					- 6											- 4						0	a	٠	٠	د	٠		٠	0.0		6			4
ciaenid	MAR.	1	ı	ı	1 4							0.	77.	21.	4.	3,	0			8		0		0.						0	12.	<del>Q</del> 1 (	00	0	-	۰ 4	•	. 7	າ		4 .	39.1	5		20.	• •	•
ഗ്	FEB.		13.1			0		7.	1.	2.		1	1	1	ı	ı	ı	1	1	ı	ı	1	1	1	ı	ı	ı	ı	1	1	1	i	I	l	I	ŧ	1	ı	i	ı	ı	ı	ı	1	1	l i	
	JAN.		i	1	1	ı	1	ı	i	ı	7	0		0			0	9	9	4	20.	9	88		37.	0	0				0	9	$\frac{31}{2}$ .	7	0.7	÷;	24.	7	80.		2	24.4	·	77.	٠,	. 70	
	DEC.	];	0.0	9	0.										ı	ì	ı	ı	ı	ı	ł	ı	1	1	1	ı	1	ı	ł	1		9 * 6	ı	1	l	L				0.0			-	16.2	- 0		0
	NOV.	 	1	ı	ı	ł	1	ı	l	1	ı	ı	1	- 4		7	1 (	0						0.0		8		0.					5.5				ı	1	ı	1	l	1 4	0.0	1	I	I	I
		-6	0	1	0	3	5.	8		c	0		2	~	, <del>,</del>	A		9	7	. 6		· -	2	ich	4	4	5	6	0	1.	0	7.	7.	œ	6	0	2	2	٠ د	4.	5	36.0	5	0,	-;	7:	٠
	STATION	7	7	0	3	3	3	7	7	7	0			-	-		•	· ·	• -	•	·	, ני	, m	, m	3	3	ص	m	٠ س	3	3	5	5	5	5	2	-	7	7	7	7	87.0	7		x	, p c	o O

	DEC.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	NOV.	
	OCT.	110 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	SEP.	
	JULY	
(:	JUNE	10000000000000000000000000000000000000
e (cont.	MAY	2 3 3 3 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Sciaenidae	MAR.	100.00 111.24 100.00 111.34 100.00 111.34 100.00
SC	FEB.	
	JAN.	111.8 12.1 12.1 12.1 12.1 13.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
	DEC.	212 30.00 10
	NOV.	0.0000.11111111111111111111111111111111
	Z	24.0 25.0 26.0 27.0
	STATION	89999999999999999999999999999999999999

	DEC.		í	ł	ı	ı	ı	ı	ı	ı	ı	ļ	1	i	i	ı	ı	ı	ł	i	ı	i	ŧ	ı	ı	ı	1	ł	i	ı	ı	ı	ł	ı	į	1	I	ŧ	ı		DEC	DEC.	0.0
	NOV.		ı	1	ı	1	ı	ı	I	1	1	ı	ı	1	ı	1	ı	ı	ı	ı	ı	ı	ı	1	ı	i	ı	j	ı	i	I	ı	ı	ı	ı	ı	i	ı	ı		VON	NO.	1 1 1
	OCT.	34.2	39.5	į.	8.6	7						- 0								0		2	-	0						0					7 .		7.						0.00
	SEP.		1	1	1	ı	1	i	ı	ł	1	ł	1	ı	ı	ı	ı	i	ł	1	ı	i	ı	١	1	ı	ı	ı	ŧ	ł	ı	ŧ	ı	ı	ı	I	ı	ı	ı		CED	orr.	1 1 1
	JULY		0.0							0	- 4	0.		0														6		2.	9	50.		-	. 0	0,		6			TITLY	0061	0.0 4.5 8.1
t.)	JUNE		0.0			9		8					2.			0		4	ı	ı	ı	1	ı	1	1	ı	ı	ı	1	ı	I	ŀ	ı	ı	ı	ı	ł	ı	ì		TIMIE	JONE	1 1 1
Sciaenidae (cont.	MAY		1	ł	ı	ı	ı	i	1	ı	i	i	ı	ı	ŀ	ı	ı	١	1	ı	ı	ı	ì	ı	ı	ı	ı	ı	ı	ì	ı	i	ı	i	ı	ı	ı	ı	1	Serranidae	MAV	EAI	0.00
ciaenid	MAR.	0.0		ı	ı	ı	1							0.0							ı	ı	i	ı	ı		0.0				ı	í	ı	ŀ	ı	ı	ı	ı	ı	Serr	MAD	MAK.	11.5
Š	FEB.	,	ı	1	ı	ı	1	ì	ŀ	1	ı	ı	ı	ı	ı	ı	ı	ı	0.0						0.0												0		0			FED.	1 1 1
	JAN.		52.3		0	0		9	7			61.	2.	08.					ı	ı	ı	1	ı	ı	1	1	i	i	i	ı	ı	i	ı	Į	i	ı	ı	ı	ι		12	JAN.	0.00
	DEC.		2.5											2						0	0		2					6													747	DEC.	1 1 1
	NOV.		1	ł	ı	ı	ł	ı	ı	ı	i	1	ı	ı	ı	ı	ı	ı	ł	ì	i	ł	ı	ŀ	ı	1	i	ł	1	ı	I	i	i	1	ł	ı	ł	ı	i		NOV	NOV.	0.00
	2	2	25.0	6.	7	8	0	e.	2.	2	8	4	5.	9	0.	2	0	0	5	ů	2	3	*	'n	6	'n	ú	7.	m				~	· ·	- -41			•	·				44.0 44.5 41.0
	STATION	13	117.0	17.	17.	17.	17.	19.	20.	20.	20.	20.	20.	20.	20.	20.	20.	20.	23.	23.	27.	27.	27.	27.	27.	30.	30.	30.	30.	30.	E	33	٠ س	33	33	33	37.	37.	37.		CWAMTON	STATION	81.5 81.5 83.0

	DEC.	0 000000
	NOV.	
	OCT.	10000000000000000000000000000000000000
	SEP.	
	JULY	3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
t.)	JUNE	
Serranidae (cont.	MAY	
rranida	MAR.	
Se	FEB.	
	JAN.	
	DEC.	
	NOV.	
		33333333333333333333333333333333333333
	STATION	883.0 883.0 885.0 885.0 885.0 897.0 89

TABLE 4. (cont.)

	DEC.	ł		DEC.	1		DEC.			DEC.	111		DEC.			DEC.	111111
				D			Ω			ū			D			Q	
	NOV.	ı		NOV.	1		NOV.	1		NOV.	111		NOV.	1111111		NOV.	2.7
	OCT.	3.2		OCT.	11.0		OCT.	0.0		OCT.	0.0		OCT.	0.0 10.0 2.5 21.3 10.8 2.4		OCT.	2.9 0.0 11.9 3.3
	SEP.	ı		SEP.	ı		SEP.	ı		SEP.	1 1 1		SEP.	1111111		SEP.	111111
	JULY	0.0		JULY	0.0		JULY	25.7		JULY	542.6 101.6 25.7		JULY	11.0 0.0 0.0 0.0 0.0 0.0		JULY	000000
nt.)	JUNE	ı		JUNE			JUNE		is	JUNE	1 1 1	sns	JUNE	0000	ısi	JUNE	0.0000000000000000000000000000000000000
Serranidae (cont.)	MAY	ı	Polynemidae	MAY	ı	Scombridae	MAY		chiliensis	MAY	111	japonicus	MAY		s xantusi	MAY	0.0111111
erranio	MAR.	ı	Poly	MAR.	1	Scon	MAR.		Sarda ci	MAR.	111	Scomber	MAR.	0.001000	Lepidopus	MAR.	0.00
G	FEB.	0.0		FEB.	0.0		FEB.	0.0		FEB.	0.00	S	FEB.	0.000	T	FEB.	11111
	JAN.	I		JAN.			JAN.			JAN.	1 1 1		JAN.	0.0000		JAN.	000000
	DEC.	0.0		DEC.	0.0	ı	DEC.	0.0		DEC.	000		DEC.	0000000	i	DEC.	0.00
	NOV.	١		NOV.			NOV.			NOV.	111		NOV.			NOV.	0.0
	STATION	137.0 50.0		STATION	137.0 35.0		H	137.0 35.0		STATION	137.0 24.0 137.0 30.0 137.0 35.0		STATION	117.0 60.0 118.0 39.0 120.0 23.0 127.0 40.0 130.0 25.6 130.0 26.0		STATION	90.0 90.0 110.0 40.0 113.0 40.0 117.0 50.0 117.0 60.0 120.0 50.0

TABLE 4. (cont.)

! !	DEC.	1111		DEC.	1111111		DEC.	111111111111111111111111111111111111111
	NOV.	1 1 1 1		NOV.	1111111		NOV.	
	OCT.	9.4 11.8 0.0 22.5		OCT.	11.8 12.9 11.8 13.4 14.4		OCT.	0000
	SEP.	1 1 1 1		SEP.	1111111		SEP.	
	JULY	0000		JULY	37,00001		JULY	111.7 113.6 12.2 112.2 11.7 11.8 10.0 10.0 10.0 10.0 10.0 10.0 10.0
(cont.)	JUNE	1111	ea	JUNE	0.00	toni	JUNE	
	MAY	1111	argentea	MAY	0.00	lockingtoni	MAY	110000000000000000000000000000000000000
Lepidopus xantusi	MAR.	0.00	Sphyraena	MAR.	00 00 111	Icichthys 1	MAR.	10 1 2 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0
Lepido	FEB.	0.0	Spl	FEB.	0.00	Icic	FEB.	11.1 13.0 13.0 10.0 10.0 10.0
	JAIN.	0.0		JAN.	00000		JAN.	0.0000000000000000000000000000000000000
	DEC.	0000		DEC.	0 000000		DEC.	222 222.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.
	NOV.			NOV.	0.0111111		NOV.	0.00
		388.0 550.0 50.0			288.0 285.0 28.7 28.0 28.0 28.0			
	STATION	123.0 123.0 130.0 133.0 5		STATION	95.0 97.0 107.0 110.0 137.0 137.0		STATION	60.00 663.00 9667.00 667.00 667.00 667.00 677.00 773.00 777.00 777.00 777.00 777.00 7780.00 6880.00 6883.00 9887.00 66

	DEC.	11111111111	DEC.	000 00000000000000000000000000000000000
	NOV.	000 0000 1111	NOV.	
	OCT.	0.0000000000000000000000000000000000000	OCT.	11.6 11.6 11.6 11.0 0.0 0.0 22.0 22.0 22.0 22.0 22.0 2
	SEP.	11111111111	SEP.	
•	JULY	9.4	JULY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
(cont.)	JUNE	mus	JUNE	1.5 
ingtoni	MAY	0.0 2.9 9.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	MAY	13.7 13.7 13.7 13.7 13.7
JS lock	MAR.	0.0 0.0 3.7 3.2 0.0 0.0 3.5 3.2 0.0 6.3 0.0	MAR.	0.00
Icichthys lockingtoni	FEB.	Pej	FEB.	
I	JAN.	0.0000000000000000000000000000000000000	JAN.	
	DEC.	00	DEC.	11111000000000110000000
	NOV.	11.5 0.0 0.0 0.0 0.0 0.0	NOV.	00000
	1	900.0 600.0 550.0 600.0 700.0 400.0		228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0 228.0
	STATION	87.0 90.0 90.0 93.0 93.0 93.0 93.0	STATION	83.0 83.0 83.0 83.0 83.0 83.0 88.5 90.0 90.0 90.0 90.0 90.0 90.0 90.0 90

TABLE 4. (cont.)

	DEC.		DEC.		DEC.	1
	NOV.		NOV.	8 7.88	NOV.	Į.
	OCT.	4.8 13.0 13.0 0.0 0.0 0.0 0.0 0.0	OCT.	10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00	OCT.	0.0
	SEP.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SEP.		SEP.	
	JULY	16.8 105.6 0.0 0.0 0.0 229.8 0.0 0.0 0.0	JULY	0000 0000	JULY	0.0
(cont.)	JUNE	26.6 83.5 0.0 10.9 0.0 11.0	JUNE	00 000000000000000000000000000000000000	JUNE	ı
simillimus	MAY		MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAY	0.0
	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	0.0
Peprilus	FEB.	0.0 0.0 0.0 0.0 10.2 7.7	FEB.	111111111111111111111111111111111111111	FEB.	ě
	JAN.	500000	JAN.	100000000000000000000000000000000000000	JAN.	0.0
	DEC.	000000 <b>46</b> 000000000000000000000000000000	DEC.	10.00000000000000000000000000000000000	DEC.	1
	NOV.		NOV.	0 0000000000000000000000000000000000000	NOV.	10.8
	ON	25.0 25.0 30.0 30.0 30.0 20.0 20.0 20.0 20.0 20	ON	890.0 990.0 990.0 990.0 755.0 770.0 770.0 770.0 770.0 770.0 770.0 770.0 770.0 770.0	NO	70.0
	STATION	120.0 120.0 120.0 120.0 120.0 130.0 133.0 133.0 137.0	TATI	83.00 83.00 83.00 90.00 90.00 90.00 90.00 100.00 110.00 120.00 120.00	STATION	87.0

TABLE 4. (cont.)

	DEC.	DBC:	1-1-1
	NOV.	NON 30.0 1.2.1 1.0.0	
	OCT.		1 1 1
	SEP.	· CARS	1 1 1
	JULY		
(cont.)	JUNE	SPP.	1 1 1
	MAY		0.0
Chiasmodontidae	MAR.	Citharichthys  MAR. MAY  MAR. MAY	
Chia	FEB.	FEB.   C. 0   C.	1 1 1
	JAN.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0000
	DEC.	12.2 0.0 0.0 0.0 0.0 14.4 11.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	
	NOV.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	111
	2	N N N N N N N N N N N N N N N N N N N	02.
	STATION	100.00 1000.00 1000.00 1000.00 1100.00 1110.00 1110.00 1113.00 1113.00 1113.00 1113.00 1113.00 663.00 663.00 663.00 667.00 667.00 667.00 677.00 777.00 777.00	0000

1	DEC.	111.0 12.2.1.1 1.1.1.1.1 1.1.1.1.1.1.1.1.1.1.
	NOV.	00
	OCT.	23.00 24.00 25.00 27
	EP.	
	JULY	000000000000000000000000000000000000000
cont.)		
-	JUNE	
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TABLE 4. (cont.)

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TABLE 4. (cont.)

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tomata	MAY	- 0.0 - 1.9 - 2.7 - 0.0 - 0.0 - 0.0 - 12.4 	000000000000000000000000000000000000000
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Hippoglossina stomata	FEB.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	FEB.
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	STATION	120.0 120.0 120.0 120.0 120.0 123.0 123.0 133.0 133.0 137.0	STATION 77.0 80.0 81.5 83.0 83.0 83.0 83.0 83.0 83.0 83.0 83.0

TABLE 4. (cont.)

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TABLE 4. (cont.)

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(cont.)	JULY	1					31.3		1.4	2.2		JULY		0.0	23.7	10	1.7	2.0	0.0	0.0	0.0	0.0		12.8			JULY	0.0	0.0	0.0		тн.у		4.1
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	NOV.		ı	i	ı	1	ş	ı	ı	ı		NOV.		ı	o de la companya de l	1	1 1	1	ı	ı	1	ı	1	1 1			NOV.		1	0.0		77074	NOV.	1111
	NO	100	26.	200	20.	20.	21.0	23.	20.	22.		NO		50.	24.		200	37.	32.	33.	28.	21.	22.	35.0			NO	50.	90.	80.0 55.0		100	Con	37.2 32.7 36.0 30.4 29.0
	STATION	10	30.		300	, ~	2 (2)	33.	37.	37.		STATION		80.	20.	20.		23.	27.	27.	30.	33.		137.0			STATION	3	3.	77.0		1 8 8 8 8 8	STATION	85.0 87.0 87.0 88.5

TABLE 4. (cont.)

Hypsopsetta guttulata (cont.)

DEC.	1 1 1 1 1 1	DEC.	0.0	DEC.	0.0 0.0 0.0 0.0 0.0	
NOV.	11111	NOV.	0.00	NOV.	0.0 NOV.	
OCT.	0.00000	OCT.	0.0	OCT.	0000 000000000000000000000000000000000	
SEP.	111111	SEP.		SEP.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
JULY	00000	JULY	10.8	JULY	JULY JULY	
JUNE	0.0 0.0 0.0 0.0 0.0	JUNE	N	JUNE	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
MAY	0.0 0.0 0.0 0.0 		4.3 10.4	MAY	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	à
MAR.	0.0 0.0 0.0 0.0 0.0	MAR.	0.0 0.0 Lyopsetta	MAR.	.0 11.1 10.6 13.2 0.0 0.0 13.9 7.7 13.2 27.5 13.2 26.7 13.2 26.7 11.4 3.3 0.0 0.0	٦.
FEB.	0.0	FEB.	0.0	FEB.	Mic.	l
JAN.	0.0 0.0 11:1 12:3 9.9	JAN.	0.0	JAN.	00000000000000000000000000000000000000	I
DEC.	11.2 0.0 0.0 0.0 0.0	DEC.	0.0	DEC.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 11.6	ŧ
NOV.	S	NOV.	0.0	NOV.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	I
STATION	95.0 31.0 97.0 28.8 107.0 30.6 110.0 33.0 120.0 22.7 120.0 25.0	STATION	60.0 50.0 77.0 48.0 87.0 50.0	STATION	77.0 51.0 81.5 44.5 81.5 46.0 83.0 51.0 83.0 70.0 90.0 29.0 91.5 29.0 95.0 28.0 95.0 30.0 100.0 31.0 113.0 32.0 113.0 33.0 120.0 30.0	3.0 80.

TABLE 4. (cont.)

	DEC.	111111	DEC.		ı	ı	ı	l 1	ı	ı	i	i	ı	1 1	1	1	í	0.0	0.0	0.0	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	NOV.	0.0000000000000000000000000000000000000	NOV.				0	8	6 (	0.0		ı	ì	1 1	1	ì	i	ı	1	ı	1	ı	1	1	1	1	1	0.0	ı	ı	) [	ı	ı
	OCT.	0.00	OCT.	1	ı	I	1 1	i	ı	ı	ı	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1 (	0.0			0.0	
	SEP.		SEP.		ı	ı	1 1	ł	i	ł	ı	ı	į	1 1	ı	1	ı	ı	ı	i	ı	ì	ı	ţ	1	1	ŧ	ı	ı	1	1	ı	ı
•	JULY	12.2	JULY	0.0								0.0														1	ı	Į	ı	1	] ]	1	ı
s (cont.)	JUNE	0.0	JUNE	ı	t	1 -	l	ı	ı	1	ı	1 (	1	1	1	ı	ı	1	1	1	ı	ı	ł	ı	ı		0.0			0.0		0.0	
pacificus	MAY		MAY	ı	ı	ŧ	ŀ	1	0.0			0.0																				0.0	_
omus pa	MAR.	0.0 0.0 0.0 2.9 0.0 0.0 0.0	MAR.	1	ı	1 1	ı	ı	ı			34.6	,		m	5	o.		÷											9		33.1	m
Microstomus	FEB.	00	FEB.	0.0						1	ı	1 1	1	1	1	ı	1	i	ı	i	i	ı	ı	ı	ı	ı	ł	<b>1</b> 1	1 1	1	ı	ı	ı
1	JAN.		JAN	1 1		!	1	1	ı	л°8	0.0	0.0		0.0	0.0	0.0	2.3	2.8	<b>-</b>	11.8	0.0	0.0	0.0	0.0	0.0	0.0	٦ د	13.0	0.0			0.0	
	DEC.	0.00	DEC.	15.4		0						1 1	i	ŧ	1	1	ı	ı	ı	ı			0.0			0.0			0.0		_	0.0	
	NOV.	0.0	NOV.	l i	1	ı	ı	ı	1	1		2.7								9		1	ı		10.6	ı	1 0	0.1	1	1	1	ı	1
	NO	60.0 80.0 90.0 90.0 70.0 70.0	į	50.0	a ur		N	0	d	<u> </u>	ű r	0 =	-	10	ı.	· .	-:				٠.		٥.			0			• •				
	STATION	70.0 77.0 77.0 77.0 80.0 83.0 87.0 90.0	DITAIC	60.0			m	۵	ന് ദ	<u> </u>	š -	-					· -	'n.			٠.	٠.	۰.	٠.	*	0	٠		0 (				

TABLE 4. (cont.)

	DEC.	11111	1111111		DEC.	0.0	DEC.	1 1	DRC		3 1 1		DEC.	0.0
	NOV.	1 1 1 1 1 1	111111	1	NOV.		NOV.	1 1	MOV		1 1 1		NOV.	0.0
	ocT.		0000000		OCT.	0.0	OCT.	0.0	di So	3	0.00		OCT.	0.00
	SEP.	11111	1111111		SEP.		SEP.	1 1	CEND	orr.	1 1 1		SEP.	1 1 1 1
	JULY	1 1 1 1 1	0.0000		JULY	0.0	JULY	0.0		1000	0.0		JULY	0000
(cont.)	JUNE		0000000	atus	JUNE	spp.	JUNE	5.2	Care Care Care Care Care Care Care Care	CONE	0.0	decurrens	JUNE	1 1 , 1
tulus	MAY	22.3		s stellatus	MAY		MAY		1 1	MAX	1 1 1		MAY	0.00
Parophrys vetulus	MAR.	15.4 0.0 53.0 11.8	35.0 111.6 24.6 0.0 3.4 3.3	Platichthys	MAR.	0.0 0.0 Pleuronichthys	MAR.	0.0		MAK.	111	Pleuronichthys	MAR.	0.0 0.0 10.8 12.7
Parop	FEB.	11111	1111111	Pla	FEB.	- P.1	FEB.	1 1 0	T T T	FEB.	0.0	Pleur	FEB.	0.0
	JAN.		33.4		JAN.	11.2	JAN.	0.0	1 #	JAN.	6.0		JAN.	0.0
	DEC.		0000000		DEC.	0.0	DEC.	2.3		DEC.	0.00		DEC.	10.6
	NOV.	0.00			NOV.	1	NOV.	}   		NOV.	1 ( )		NOV.	0,0
	STATION	5.0 28. 5.0 29. 7.0 28. 7.0 28. 7.0 29.	103.0 30.0 103.0 31.0 110.0 32.4 110.0 33.0 1113.0 35.0 117.0 26.0		STATION	87.0 34.0	STATION	120.0 24.0		STATION	117.0 45.0 133.0 22.0 133.0 23.0		STATION	60.0 70.0 73.0 53.0 87.0 33.0 87.0 60.0

	DEC.				0.0		0.0	ı	1	ŧ	í	í	i	1	1	ı	ı	i	ı	ı		ı	ı	i	and the same of th	ı	ı	i	ı	i	ł	ı		DEC.		1	i	ı	ı	ı		13.5			ı
	NOV.		ì	1	ı	ı	ı	ı	ı	1	ı	ı	ı	ı	ı	ı	1	ł		ı	ı	ı	ı	1	ì	ŀ	ı	ı	ı	ı	i	l		NOV.	1 4		)   	1	1	ı	ı	ı	l	ı	I
	OCT.	1	11.2					- 0								0	٠	0		0	0	, ,	0	9		ů,								OCT.		ı						0.0	0		
	SEP.		1	ı	1	ţ	ı	ı	ı	i	ì	ı	ı	ł	1	ı	1	١		ì	ı	t	ł	ı	1	ı	ı	ı	1	ı	ı	i		SEP.		1	ı	1	!	ı	t	ŀ	i	ı	I
	JULY	1	0.0		ı	ı	ŀ	1	-						8	0				0	8	٠									0.0			JULY			0 1					0.0			
teri	JUNE		1	ì	0.0		1	- 4						6	0		9			6		ı	ı	ı	ı	ı	ı	1	i	1	ı	ı	icalis	JUNE		i	1	ı	ł	ι	ı	ı	ı	ŀ	ı
Pleuronichthys ritteri	MAY	1								1	ı	ı	ı		. 1		ı	ł	900	ì	i	ı	ı	ı	ı	ı	ı	ł	1	ı	ı	1	euronichthys verticalis	MAY	-							0.0			
ronicht	MAR.	1		0 1			0 0		0		ı	ŧ		0.0				0	0						ı	ŀ				0.0		ı	nichth	MAR.			5.	0	. 0			0.0			
Pleu	FEB.			1	ı	1	1	i	ı	1	. 1	ĺ		1	1	i	I	l	ı	i											2.7		Pleuro	FEB.	2 3	0.0	1 1	1	ı	1		ŀ	1	1	ı
	JAN.		000											0		0					0	i	1	ı	1	\$	1	ı	1	ł	ı	ı		JAN.	i							0.0			
	DEC.		I					٠						0				0	0					0			- 4				0.0			DEC.		0.0		1	- 1	ı	1	1	ı	1	0.0
	NOV.	1			ţ	1	ı	0		1	ı	1	I	1	ı	ı	ł	i	ı	ı	ı	1	ı	Į	1	1	1	ı	ı	1	1	ı		NOV.		ı		0	9	0		0.0			ı
		10	43.0	. 7		. 4	. 4	o a	00	0 1	ů	•	, ,	٠, د	7	7	٠,	4	5.	0	0	5.	9	7.	2.	m	٠,	9	7	. 6	0	0.			10	50	٥.	° <	. v	· c	· _	43.0	8	9.	7.
	STATION		81.5	20	o c	· -		י ר	ر ا د	13.	17	17.	./ [	19.	20.	20.	20.	20.	20.	20.	20.	23.	23.	23.	27.	27.	30.	30.	30.	30.	0	37.		STATION		÷ (	o -	•	÷		, (	83.0	3.	3	5.

TABLE 4. (cont.)

	DEC.	110000000000000001111111111111111111111
	NOV.	
	OCT.	10000000000000000000000000000000000000
	SEP.	
(cont.)	JULY	1.00 1.00
İ	JUNE	2 4 . 4 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 .
verticalis	MAY	120000 0.0000 0.000000
	MAR.	88.00 00.00 113.22 111.5 00.00 0
leuronichthys	FEB.	
Ple	JAN.	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
	DEC.	
	NOV.	
		222 22 22 23 23 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25
	STATION	885.0 887.0 887.0 887.0 991.0 991.5

TABLE 4. (cont.)

1 [2]		DEC		DEC.	1000   • • • • • • • • • • • • • • • • • • •
DEC				IQ	
NOV.	111111111	NOV.	0.0	NOV.	
OCT.	42.2 42.2 42.2 0.0 0.0 0.0	OCT.		OCT.	2.0 2.7 2.9 2.9 33.4 33.4 10.0 118.3 194.4 29.8 29.8 29.8 29.8 11.0 10.8 11.0 10.8 11.6 8.3
SEP.	11111111	SEP.		SEP.	
JULY	16.8 10.1 5.6 1.7 0.0 11.4 6.5	JULY	0.0	JULY	
JUNE	8.0 0.0 2.8 10.9 - - - - - - - - - - - - - - - - - - -	JUNE		JUNE	000000000000000000000000000000000000000
MAY		MAY	0.0 Irus spp	MAY	0000
MAR.	0.0 0.0 0.0 0.0 0.0 0.0 0.0	MAR.	17.9 Symphu	MAR.	
FEB.	- - 0.0 2.5 0.0 5.2 0.0 0.0	FEB.	5.6	FEB.	0 0000000000000000000000000000000000000
JAN.	2.5 15.1 10.9 0.0 -	JAN.	į į	JAN.	0.0000000000000000000000000000000000000
DEC.	000000000	DEC.	0.0	DEC.	
NOV.		NOV.	1 1	NOV.	111211111111111111111111111111111111111
TATION	20.0 25.0 20.0 26.0 20.0 30.0 20.0 40.0 23.0 36.0 27.0 33.0 27.0 35.0 30.0 27.0 37.0 22.0	ATION	56.0 49.0 77.0 48.0	ATION	88.5 30.4 90.0 28.0 90.0 31.0 97.0 30.0 110.0 55.0 113.0 50.0 117.0 80.0 117.0 80.0 118.0 39.0 220.0 45.0 220.0 45.0 23.0 50.0 23.0 35.0 27.0 35.0 27.0 36.0 27.0 36.0 27.0 36.0 27.0 36.0 27.0 40.0 27.0 40.0 27.0 40.0 27.0 40.0 27.0 27.0
	. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV.	25.0 - 0.0 2.5 - 11.0 - 8.0 16.8 - 2.4 - 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Tation Nov. DEC. Jan. Feb. Mar. May June July SEP. Oct. Nov. $1.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0$	1 NOV. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV.	100V. DEC. JAN. FEB. MAR. MAY JUNE JULY SEP. OCT. NOV. 15:00.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0

TABLE 4. (cont.)

	DEC.	1 1	1	li	i	1		DEC.	1 1	1	ı	ł	) 1	1	1	1 1	l F	i	1 1	1	1	l I	ŀ	i	1	0.0	0.0				0 1	4.9		l i
	NOV.	1 1	1	1 1	l E	ı		NOV.	0.0		0.0	0.0	0.0	10.1	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	1	L	1 1	-	ł	ł	l	i i	1	1	1 1
	OCT.	0.0	5.6	0.0	0.0	11.5		ocr.	l :	1 1	ı	1	ŧ !	J	ì	ı	l t	i	1	ł I	į		1	0.0	0.0		0.0	11.8	0.0	0.0		0.0	0.0	0.0
	SEP.		ı	ł (	1 }	ı		SEP.	1	1	1	1	1 1	ı	i	ł	1 1	ŝ	1	l 1	í	l f	1	1	I	1 1	ı	ı	I	ı	1 1	ı	1	1 1
	JULY	0.0		0	2.3	0		JULY	0.0	9	9 0		0	0 0	- 6	0	0		0	0 0			0 0		9	8 1	0 0			- 0	0	0 0		0.0
(cont.)	JUNE		ŝ	1	1 1	1	larva	JUNE	ı	1 1	1	ı	1 1	1 1	ı	1	1 1	1	ı	1 1	1	1	1	1	***************************************	1 1	1	1	ŀ	I	1 1	ı	ı	1 1
spp. (co	MAY		1	1	ł /	ş	d fish	MAY	ı	1 (	1	ı		0 0			0 0	- 6				0	0 0	- 0			0 0	0			0			17.8
Symphurus s	MAR.		1	ı	1 1	1	integrated	MAR.	ı	1 1	0.0	ι	1 :	1		0,	9 4			0 0		0	0 0	3		n c	0		2	0	0	0 0		3.5
Symp	FEB.	0.0		0	0 1	0 0	Disin	FEB.	0.0		0		0	0 0	0	0	38.6	0	ı	ı ı	1	ŀ	1	ı	ı	day day	1	1	I	ı	1 1	1	i	1 1
	JAN.		1	ł	1 1	i		JAN.		1 1		J	1	1 1	1	1	1 1	f		0 0		0	0 0			0	0 0				0	0 0		000
	DEC.	4.7				0		DEC.		o -	0 0	0		0.0			0.0	0		12.2		2			1	1 1	1	1	1	ı	1 1	1	1	0.0
	NOV.		1	•	1 1	1		NOV.		1 1	l f	1	ı	1 1	ì	ı	<b>↓</b> 1	ŧ	1	1 1	1	1	1 1		0		0 6			0	0	0	11.6	0
		9.0	2	0	7.	0			0:	70	5 .	0	'n	50	0	0	- 0	0	0	- 7	5	0	00	4	4	00	2	m	4	5	x o	0	50	0.0
	STATION	133.0 2	33.0	37.0	37.0	37.0		STATION	0.0	0.0	0.0	7.0 5	7.0 5	0.0	0.0	3.0 6	7.0 5	7.0 7	7.0 9	0.0	0.0	0.0	0.0	1.5 4	1.5 4	1,5 0,5	3.0	3.0 4	3.0 4	3.0 4	4.0.6	3.0 5	3.0	96

	DEC.	23.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	1 1 1 1 1
	NOV.	111111111111111111111111111111111111111	1 1 1 1 1
	oct.		
	SEP.		1 1 1 1 1
( •	JULY	000000000001111111111111111111111111111	1 1 1 1 1
a (cont.	JUNE	10000000000000000000000000000000000000	
ish larva	MAY		
Ŧ	MAR.	220 220 338 338 200 000 000 000 000 000 000 000 000 00	111.4 0.0 25.7 0.0 3.7
Disintegrated	FEB.		
Dis	JAN.	11000000000000000000000000000000000000	
	DEC.	0000 0000 00	0.0000000000000000000000000000000000000
	NOV.	0000 00000 0000000000000000000000000000	
	STATION	888888888887770 87770	0.0 31 0.0 32 0.0 35 0.0 60 0.0 70

NOV SEP. JULY Disintegrated fish larva (cont.) JUNE MAY FEB. 000000 00000 0000 0000000 0000 DEC NOV 880.00 83328 800.00 STATION 

	DEC.		ı	ł	ŀ	1	ı	I	ı	1 1		ı	i	ı	ı	1	1	I	i	۱ ۱	ı	1	1	i	ł	ı	ł	l	1 1		ı	ı	1 1			DEC.		ı	1 1	ŀ
	NOV.		ı	1	ł	ı	ł	ı	١	l I	1	à	1	ı	1	1	i	Î	1 1	1 1	t	ı	ı	ł	1	i	ı	1	1 1	i	+	1	Li			NOV.	30.4	25.6	0.0	0.0
	OCT.		3.0				11.6	0.0	7.0	9.0		0.3	0.0	0.0	7.3	2.2	0.0	0.0		11.2	2.8	0.0	5.2	3.1	0.0	2.7	0.0	0.0	2 - 2	0.0	0.0	0.0	0.0	1		OCT.		ı	1 1	1
	SEP.		ı	ı	ł	ŧ	l 1	l	1 1		1	1	ì	ı	ı	I	<b>I</b> 1	۱ ۱	l I	ł	ł	ı	1	1	1	ı	1 1	1	. 1	ı	ı	1	i :			SEP.		Į	l ı	í
nt.)	JULY	0.0							8		0.0			5.1	0.0	0.0	•	•	•	11.6	12.8	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0			JULY	0.0		l 1	0.0
cva (co	JUNE	22.0	0.0	_	ì	1 1			ı	ì	i	1	1	1	ı	1 1	! !	-1	ļ	1	ı	ı	ţ	ı	1	ı	i i	1	ı	1	ı	ı	i I		larva	JUNE		1	1 1	ı
Disintegrated fish larva (cont.)	MAY		1	I	Ι.	1 1	i	i 1	1	1	1	1	1	1	I	1 1	1	1	e de	1	1	1	ı	1	ł	1 1	1	1	ı	1	ı	ì	i i		ed rish	MAY	ı	1 (	ı	1
grated a	MAR.	0.0					0	•		1	ı	ı	1							0.0	- 4		ı	I	ı	1 1	) <b>I</b>	ı	1	1	ı	a de	i I		Unidentified	MAR.	1	1 1	- 1	f
isinte	FEB.		l			000																0.0										- 0 0	2.9	1. 2.	0110	FEB.		0.0		
	JAN.	0.0				ı	ı	0.0	1	1	ı	ı	í	I	1	ı	ı	1	ı	1	ı	ı	1	Ţ	1 1	1	1	1	ı	ı	ı	1	! !			JAN.	ı	1 1	ı	ı
 	DEC.	0.0	1 1																						٠, د								0.6			DEC.				1
	NOV.	1	1	ı	1	1	1	1	1	ı	1	ı	1	1	j	ı	1	ı	ı	ı	ı	ı	I	1 1	- 1	-	ı	1	1	ı	ı	1 1	i			NOV.	1	1 1	ŀ	1
	NO	5	0 0	36	37	39	42	09	32	33	35	36.	40,4	0 C	26.7	28	29	30.	35.	40.	50.	60.	20.	27.	23.	35.	40.	20.	22.	23.	24.	30°	60.			Z	0.	50.0	5	6
	STATION	120.0	0 0	25	23	23	23	23	27	27	27	7	7	2		0	0	0	0	0	0	0.0		, , ,	, ~	, n	ı ش	7	7.	7	٠٢	1:	7.			STATION	0.	63.0	3	9

DEC. NOV OCT SEP. JULY Unidentified fish larva (cont.) JUNE FEB. DEC. STATION

0.0 NOV. CIL SEP. 122 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | Unidentified fish larva (cont.) JUNE 20.00 11.00 12.00 12.00 13.00 10 FEB JAN DEC 00000 NOV. 226.9 226.9 230.0 23 STATION 93.00

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44	MAR.	0	0	0	13.0	0					0	37.8	5.	2	4.	3	1	1	ł	I	ì	ı	ì	ı				0		7.			1	1	1	ı	1	I	1	1	l	I	ŀ	I	l	I	l.
Unidentified	FEB.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	I	I	ı	1	1			0		0.0	0		ı	1	- 0					5		0						0		8	4	0 1	1 4		- 6		0		- 0	0		0	0.0		
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	. NO	1 6		5	50.0	0	0	0	5	9		- 0		 					. <	· ruí	ک د		٠		ک د	9	7	8	6	5.	0	. 0			· ~			0	0	0	0	2	3	4	5.	0.	0.
	STATION	200	20.	20.	120.0	20.	20.	20.	23.	23.	22	33.	23.	30		, r	37.	27.	17	27.	77.	27.	57.	27.	30.	30.	30.	30.	30.	30.	30.	30.	33.		, ,	, c	3 6	33.	33.	33.	37.	37.	37.	37.	37.	37.	37.

Summary of pooled occurrences of all larval fish taxa taken on CalCOFI surveys from 1972 to 1981. Data for 1974, 1977, and 1980 represent single cruises that are part of surveys in 1975, 1978, and TABLE 5.

Data for 1974, 1977, 1981, respectively.	77, and 1980 y. Taxa are	represent listed in	sin	gle cruises that same order as Ta	s that a	able 4.	of surveys i
NAME	1972	1974	1975	1977	1978	1980	1981
and in a link to	-	1	ł	ı	ı	1	ı
Anguilliformes	26	2	8	1	3	1	ı
Etrumeus acuminatus	4	i	15	I	60	ı	ı
Opisthonema spp.	1 1	1 7		1 0		10	1 6
Sardinops sagax	17	11		, c		13	28
Engraulis morddx	₹ ₩	D	# LC	4	3 (	7 1	4 T 4
Microstoma microstoma	m (C)	ω α		س -		9	3 1
ndida	44	)	26	1	25	1	18
Nansenia crassa	(4)	80		7		e .	13
	121	-		m		1	49
Bathylagus longirostris	1 T	1 4	١٢	[ ]	Ω	1 <	10
Rathulagus ochotensis	345	13	273	29		13.4	244
pacit	. 0	î	· m	i i	d.		38
Bathylagus wesethi	164	15	156	20	298	11	127
Leuroglossus stillbius	$\infty$	52	9	28	-	22	298
Bathylychnops exilis		\$ !	i	1	i I		<b>1</b>
	<b>-</b> 1	۱ -	۱ -	1 (		) (	ł 1
Macropinna microstoma	ی ا	<b>-</b> 1	<b>⊣</b> 1	1	-	1	1 1
Ctom; iformes	η α	_	-	i	410	1	m
Gonostomatidae	7	10	$1\overline{2}$	1	23	7	23
Cyclothone spp.	130	30	165	20	325	38	162
Danaphos oculatus	51	9	49	2	73	ť	17
Diplophos taenia	47	ı	1	ţ	2	ı	l r
Gonostoma spp.	1 1	1 -	1 0	(	7 7	1 -	°
Valencioned luc ctellatur	- α	<b>⊣</b> 1	- α	7 1	<b>4</b> ,	4 ∟	10
stellatur	271	48	164	40	379	415	222
eri		2	)	2	- ო	)	1 1
lae	217	63	218	40	371	33	150
Chauliodus macouni	123	10	78	11	2	12	55
ostomo	25	18	30	<b>∞</b>	29	m	0.0
	5	I	2	ı	22	I	<b>∞</b>
Bathophilus spp.	]]	I	I	1	16	1	ı
Bustomias spp.	<b>-</b>	1	1 -	ı	٦,	1	ic
	1 4	ı	T	I	91	ı	7
Tactostoma macropus	ດຸ່	1 0		1 4		1 -	ດເ
Stomias atriventer Mustorbiformos	111/	ו ע	y C	ا ۵	OTT	T T	- 1
Exertise of the Section of the Secti	7 -	1	ŀ	į	1	ı	
Paralepididae	32	7		1	16	1	4 60
Lestidiops ringens	82	16	39	11	63	11	58
Notolepis risso	10	1	5	7	17	ı	5
Stemonosudis macrura	2	ŀ	ı	1	r=1	1	1
Sudis atrox	1	ł	ı	ł	5	i	ı

11 168 14 81 82 8 264 237 118 60 56 56 8 13 1981 1980 24 191 168 20 44 47 29 65 179 76 14 32 154 212 212 214 141 141 147 31 58 30 30 330 1978 1977 22 299 1975 10 12 23 23 23 80 80 66 70 70 151 29 149 13 351 342 15 141 114 114 14 120 215 41 1974 68 201 15 49 2 120 120 12 21 21 21 3377 3377 305 15 16 24 123 11 11 68 107 14 281 25 187 356 218 1972 Symbolophorus californiensis Rosenblattichthys volucris Tarletonbeania crenularis Stenobrachius leucopsarus Diogenichthys spp. Diogenichthys atlanticus Diogenichthys laternatus Rlectrona rissoi Myctophum aurolaternatum Protomyctophum thompsoni Not oscopelus resplendens Scopelarchoides nicholsi Ceratoscopelus townsendi Myctophum nitidulum Protomyctophum crockeri Taaningichthys minimus Triphoturus nigrescens Notolychnus valdiviae Gonichthys tenuiculus Triphoturus mexicanus Benthalbella spp. Benthalbella dentata Hygophum atratum Hygophum reinhardtii Merluccius productus Lampanyctus regalis Gadus macrocephalus Microgadus proximus Lampanyctus ritteri Centrobranchus spp. Benthosema pterota Lampadena urophaos Scopelosaurus spp. Myctophidae Bolinichthys spp. Scopelarchus spp. Lampanyctus spp. Bregmaceros spp. TABLE 5. (cont.) Parvilux inqens Physiculus spp. Scopelarchidae Hygophum spp. Loweina rara Synodus spp. Aulopus spp. Diaphus spp. Macrouridae Gadidae Moridae NAME

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NAME	1972	1974	1975	1977	1978	1980	1981
	0	1			0 1	(     	0 -
Ophidiliformes Processing to marginata	25	1 1	LD 5	1	11	i !	12
Carapidae	2	ı	ı l	1	1	1	1
Chilara taylori	3	ł	17	1	4	1	1
Ophidion scrippsae	7	9	18	ı	9,	I	_
Porichthys spp.	1 -	1	1 1	)	I	1 1	1 1
Antennar 11dae Ceratioidei	9	-	11	ŀ	4	1	š
Lonhiidae	-	1	1	1	1	1	1
Gobiesocidae	2	I	10	600	3	!	1
Exocoetidae	i	I	J	ł	7	ı	m -
Hemiramphidae	l r	ı	I	ı	1	I	7
Oxyporhamphus micropterus	7 T	۱ -			ו כ	۱۳	7
Cololabis Saira	3	4 m	7	1	13	7	· m
Trachipteridae	56	7	18	2	10	1	5
Eutaeniophoridae	2	l	1	1 (	2	1 4	1 0
Melamphaes spp.	219	6	130	ט נ	181	ט כ	<i>و ا</i> د د
Poromitra spp.	C T	1 1	10	7	7 <del>*</del>	7 1	17
Scopeloberyx robustus	21	*	٧	٣	19	ı	4
Macroramphosus gracilis	7 7	r cc	וו	וח	7 (1)	2	7
Suprasthus spn.	2	) (T)	80	I	9	ı	4
Agonidae	$1\overline{7}$	-	11	ı	1	2	7
Anoplopoma fimbria	7	I	1	ı	I	ı	
Cottidae	28	5	44	2	17	2	23
Scorpaenichthys marmoratus	13	m,	15	1	ى د	'n	1 [
Cyclopteridae	14	T	13	1	C.	۱ ۳	<b>^</b>
Hexagrammidae	10	1	-1 -		7 1	۱ ۱	-
Ophiodon elongatus	۱۲	1 1	T V	1 1	1 1		H V
Oxylebius pictus	n u	۱۲	4 6	۱ <		. ~	o r
correspides	٥ ر	4 1	0 1	r I	4 1	ומ	1 1
Scornaepa spn.	4 m	1	11	1	8	ı	9
Sebastes spp.	509	94	260	30	429	52	379
	18	1	13	2	29	2	20
Sebastes jordani	06	1	42	1	47	1	22
	13	I	17	I	<b>α</b> (	ı	Ω 0
macdonaldi	15	1 9	21	1 -	/ 1	1 [	χ ο
Sebastes paucispinis	140	0.1	ر ر د ر	11	4 C		0 0
Sebastolobus spp.	69	⊣ 1	23	] [	32	<b>⊣</b> 1	13
Prionotus spp.	ه ه	۱ -	71	. 1	- 1	ı	η α
Blennioluei Bathymasteridae	\	4 1	r I	ł	I	1	) !
Hupsoblennius spp.	16	9	82	1	50	2	19
Clinidae	30	6	29	2	23	m v	17
Gobiidae	88	26	121	10	73	9 1	38
Microdesmidae	12	1 1	۱ -	) l	10	: 1	(**
Icosteus denigmaticus Labridae	10	1	٦ ١	ı	7	1	1
nabi i cac	<b>&gt;</b>						

TABLE 5. (cont.)							
NAME	1972	1974	1975	1977	1978	1980	1981
Halichooree chn	6	   	26		21	1 1	7
Oxyjulis californica	21	ţ	23	_	99	7	33
Semicossyphus pulcher	10	1 1	00 l	1 1	₹ 1	1 1	m 1
Chromis nunctivinnis	2 2	l	22	М	14	1	16
Hypsypops rubicundus		ı	m	ı	1 -	1	1
Mugil, spp.	2.0	1	1 -	1	- 0	1	1
Howella brodle!	7 [	f I	-1 C*	1 (	ע ר	1 1	1 1
Carangidae	~ *7	I	10	1	~ &	1	
Seriola lalandi	٠ ٦	ı	S	I	7	1	ı
Trachurus symmetricus	116	l	119	7	137	1	87
Caristius macropus	1 1	1	1 .	ł	2	I	(
Coryphaena hippurus	9 -	1	<b>4</b> 7	de .	22	1	י ניי
Gerreidae	- F	) I	n œ	l f	12	1	200
Girella nigricans	ł	1	) ~~	_	m	1	2
	2	1	С	1	П	ł	I
Caulolatilus princeps	7	[ {	2	\	2	ı	15
	63	28	260	16	111	ì	7
13	I	1	ı	1	t	1 1 1	7 7
Genyonemus lineatus	1	I	I	1		CT	0 <del>1</del>
Koncador Stearnsll	1 1	1	1 1	1 1	1 1	1	26
Serranidae	21		7.5	-	32	_	26
Polynemidae	1 1	1	] [	(	1 1	1.1	) i
Gempylidae	15	ł	1	1	12	ł	П
Scombridae	1	ŀ	1	I	1	1	I
6	4	1	I	I	7	ı	l
Euthynnus spp.	4	j	1 (	l	-	1	l e
Sarda chiliensis	4 0	ł	n 0	l	13	I	1 20
Thursus albacares	00	ı	) i	ı	1 1	1	0 1
	7	7	10	1	11	I	8
Sphyraena argentea	1	ı	6	I	5	1	14
Icichthys lockingtoni	140	9	46	2	73	I	22
	1 0	l	1	1	-	1 !	1
Cubiceps paucifaulatus	7 [	1	1	I 1	1 4	[	l
Psenes perincinus	יש מ	1	l i	1 1	0 1		1
	11	9	54	m		1	31
Tetragonurus cuvieri	13	80	15	2	24	9	8
Chiasmodontidae	15	2	11	4		2	20
Uranoscopidae		1	1	I	1 (	1	1
Pleuronectiformes	ω,	1	ı	I	2	ł	ļ
Bothidae	- o	1	1	I	1	ŧ	ı
Citharichthus spp.	227	96	157	27	797	9	153
Citharichthys stigmaeus	92	33	133	20	131	24	63
Cyclopsetta spp.	1	i	í	1	1	ı	i

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NAME	1972	1974	1975	1977	1978	1980	1981
Hippoglossina SDD.	1	1	I	1	1		
Hippoqlossina stomata	17	8	36	П	21	i	9
Paralichthys californicus	37	25	106	4	47	2	58
Syacium ovale	5	I	1	1	ı	1	1
Xystreurys liolepis	5	4	12	1	5	1	C.
Gluptocephalus zachirus	15	ı	4	I	22	I	24
Hypsopsetta guttulata	J	5	8	2	7	1	2
Isopsetta isolepis	m	I	ł	1	_	1	1
Lepidopsetta bilineata	m	1	3	ı	1	ı	1
Luopsetta exilis	54	ı	20	l	41	2	57
Microstomus pacificus	17	1	6	I	28	ł	14
Parophrys vetulus	53	9	20	ı	20	ı	38
Platichthys stellatus	9	1	1	ł	7	\$	2
Pleuronichthys spp.	1	1	1	I	t	1	_
Pleuronichthys coenosus	m	ı	en	ł	9	1	2
Pleuronichthys decurrens	80	7	æ	ı	1	1	1
Pleuronichthys ritteri	8	2	33	1	9	4	11
Pleuronichthys verticalis	21	1	100	2	22	2	24
Psettichthys melanostictus	80	ı	2	I	7	1	1
Symphurus spp.	20	ω	26	7	16	1	8
Disintegrated fish larva	258	27	196	80	224	22	147
Unidentified fish larva	222	21	183	12	162	15	109

TABLE 6. List of stations which were occupied twice in one month during 1975.

Stati	on	Montl	n
93.0	60.0	11	(1974)
63.0	50.0	2	•
63.0	52.0	2	
63.0	55.0	2	
63.0	60.0	2	
66.0	49.0	2	
67.0	50.0	2	
67.0	55.0	2	
67.0	60.0	2	
67.0	65.0	2	
67.0	70.0	2	
70.0	51.0	2	
70.0	53.0	2	
70.0	60.0	2	
70.0	65.0	2	
70.0	70.0	2	
73.0	50.0	2	

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